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PROMOTION VS. NONPROMOTION: 1. THE EARLIER RESEARCH EVIDENCE

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Research studies dealing with the effects of promotion practices may be classified according to the major concern of the study. Using this approach it is possible to identify at least five interrelated areas of investigation:

1. Promotion practices and gain in achievement.
2. Promotion practices and variability in achievement.
3. Promotion practices and social-personal development.
4. Promotion practices and attitudes and habits.
5. Promotion practices and school holding power.

These categories will be used in this review. They permit the multiple classification of studies whenever this is appropriate.

Promotion Practices and Gain in Achievement

Keyes (21) was among the first to investigate the effect of promotion practices on gain in achievement. His analysis of the work done by nonpromoted pupils revealed that twenty-one per cent did better after repeating than before, and that forty per cent did worse. Similar results were noted by McKinney (28), Gerson (16), and Buckingham (7). More recently, however, Mateer (26), Brundage (6), Lobdell (25), Templin (42), Frances (15), and Stringer (40) have presented evidence concerning the benefits accruing to pupil achievement from nonpromotion. Lobdell, for example, found that when specific and individualized criteria were carefully used to select children who were to repeat a grade, almost seventy per cent of the pupils made noticeable gains in achievement.

There is no indication in these studies, however, for how well the same children might have done had they been promoted. In search of an answer to this question, Arthur (5) equated a group of non-promoted first grade pupils with a promoted group on the basis of mental age, and found that the former gained no more in reading over a two-year period than did the latter. Because there were many uncontrolled variables in this experiment, the relationship between the promotion factor and gain in achievement is not clear.

Klene and Branson (2) tried to establish a measure of control over experimental conditions when they equated two groups of potential repeaters on the basis of chronological age, mental age, and sex. One group was then promoted, the other was not. It was

observed that over a five-month period the group which had been promoted gained more in achievement than did the nonpromoted group. Since the initial measures of achievement were not obtained until after the promotional decision had been made, it is possible that the full effect of this decision on the pupils' achievement was not observed in this study.

Farley (13) reports an investigation in which a measure of achievement secured before the promotional decision was used as a base from which to measure subsequent gain. He equated a group of 162 nonpromoted pupils with 193 promoted pupils in grades two and five on the basis of I.Q., mental age, and chronological age. Gain in achievement in arithmetic and reading was measured by standardized tests administered prior to, and five-months after, the promotional decision. Biserial correlations of the gains made by the two groups revealed that nonpromotion was of doubtful value in improving achievement. The work of Cook and Kearney (12) gives added support to this view. When semester gains in achievement for nonpromoted and promoted pupils of equivalent chronological age, I.Q., reading age, and grade level were compared, the differences were non-significant.

None of these experiments with equivalent groups of promoted and nonpromoted pupils extended over more than a five-month period. They do not, as a result, provide an indication of what the long term benefits or ill-effects of nonpromotion might be. Anderson (3) evaluated the differences among promoted, not promoted, and "considered for nonpromotion but promoted" pupils a year after the promotional decision. He concluded that low-achievers seem to make the same achievement gains whether they are promoted or not. The three groups used in this study were drawn from five different school systems. As an analysis of variance showed, they were significantly different on all pre-test measures, and in chronological and mental age.

A somewhat different research design was employed by Coffield and Blommers (10) in their analysis of the long-term effect of promotion practices on school achievement. They measured the achievement of pupils who had been promoted and nonpromoted in grades three to six at one and two-year intervals, as well as at the time when all the nonpromoted pupils were in the seventh grade. They found that children who repeat a grade, and those who are promoted, ultimately perform at about the same level when their performance is measured at the same higher grade. They noted, however, that certain uncontrolled variables, such as chronological age, may have influenced their findings. A similar *ex post facto* procedure was followed by Wallihan (43) with matched groups of

pupils one of which had experienced non-promotion in the first grade. A comparison of the reading achievement of the two groups in grades four and six showed no discernable improvement as a result of nonpromotion.

Others have attempted to ascertain the effect of promotion practices on achievement levels by comparing the achievement of pupils in schools with high rates of nonpromotion with the achievement of those in schools with low nonpromotion-rates. A comparison of this sort was undertaken by Cook (11) with seventh-graders in nine schools with high non-promotion-rates, and nine schools with low nonpromotion-rates. He found that there was no difference in the level of achievement between pupils in the two groups of schools. Similar findings have been reported from Philadelphia (32) and Queensland, Australia (34).

Hall and Demarast's (19) recent longitudinal examination of the school performance of over twenty thousand elementary school children offers further evidence of the effect of low rates of non-promotion in pupil achievement. Records of achievement gathered over a ten-year period in the fourth and sixth grades indicated that regular promotion, which kept children with their own age group, did not result in a lowering of academic achievement.

In total, existing research on the effect of promotion practices on gain in achievement serves to support the conclusion reached by Saunders that

... nonpromotion of pupils in elementary schools is order to assure mastery of subject matter does not often accomplish its objective. Children do not appear to learn more by repeating a grade but experience less growth in subject-matter achievement than they do when promoted (39, p. 29).

It should not be overlooked, however, that this conclusion stems from research studies which in many instances failed to control, or take cognizances of, other factors likely to be influential in determining gain in achievement.

Promotion Practices and Variability in Achievement

Verification of the belief that nonpromotion tends to reduce variability in achievement throughout the grades was first attempted by Caswell (8). Almost 1,600 pupils in grades five and six in forty-six schools with varying rates of nonpromotion were examined. It was discovered that schools with high rates of nonpromotion did not tend to have grade groups less difficult to instruct because of small variability of achievement than schools with lower rates of nonpromotion. Substantially the same conclusion was reached by Akridge (1), and Cheyney and Boyer (9).

Later studies, wherein somewhat more rigorous controls were established, also produced similar results. Cook (11) matched nine

low-rate promotion schools with nine high-rate promotion schools on the basis of parental occupation, pupil intelligence, and pupil achievement. When the variability of the classes was compared with respect to mental age and eleven educational attainment fields, no significant difference was found between the two groups of schools. Wallihan's (43) study of matched groups on nonpromoted and promoted pupils also revealed that uniformity of instructional groups in the upper grades was not maintained by nonpromotion in the primary grades.

Thus, the available research evidence supports the view that through nonpromotion a school does not reduce the variation in achievement found in individual classes.

Promotion Practices and Social-Personal Development

The effect of promotion practices on social-personal development became a concern of research workers about three decades ago. The evidence accumulated since then indicates that low-achievers who are promoted tend to be better adjusted than do their non-promoted peers.

An early suggestion of this came from Farley, Frey, and Garland (14) following a study of 193 pupils, twelve years of age, enrolled in grades four to eight. They found a significant correlation between nonpromotion and a low score on teacher-rated character traits. No attempt was made, however, to ascertain which of these variables was logically prior to the other. Cook and Kearney (12) sought to clarify this relationship when they administered a personality inventory designed to measure ascendancy-submission, extroversion-introversion, and emotional stability to groups of nonpromoted and promoted pupils in grades four to seven at the beginning and end of the experimental period. They found insignificant differences between the two groups in ascendancy-submission and extroversion-introversion. However, an analysis of covariance revealed a significant difference at the ten per cent level in emotional stability scores in favor of the promoted group.

Anfinson (4) matched 116 pairs of junior high school pupils on the basis of school attendance, chronological age, sex, intelligence, and socioeconomic status, one member of each pair having been promoted regularly and the other having been nonpromoted in some previous grade. His findings showed a significant advantage for regularly-promoted pupils over nonpromoted pupils as revealed by their total score on the Symonds-Block Student Questionnaire. He noted, however, that of the differences observed on the seven sub-sections of the questionnaire, only one—adjustment to curriculum—was highly significant. In fact, the nonpromoted pupils ranked

higher in adjustment to social life, other pupils, and homes and families, while the regularly-promoted pupils ranked higher in adjustment to teachers and personal affairs.

The adverse effect of nonpromotion on social-personal development has been discounted by Anderson (3). His subjects were 463 promoted, 52 nonpromoted, and 109 "considered for nonpromotion but promoted" pupils. Teacher ratings on cooperation, social consciousness, emotional adjustment, leadership, and responsibility were compared. It was revealed that nonpromotion had no ill-effect on personality characteristics. Stringer (40) also has described mental health gains accruing to nonpromoted pupils. Allen (2), Huddleston (20), and Robinson (35), on the other hand, have reported a relatively high incidence of social-personal maladjustment among nonpromoted pupils.

This latter point-of-view is buttressed by studies which attempted to observe the effect of the promotion factor on some of the more overt aspects of behavior. Haggerty (18), Robers and Trainor (36), and Farley (13) found more evidence of undesirable behavior among nonpromoted than promoted pupils. McElwee (27) in her study of groups of accelerated, normal, and retarded children found the retarded more disobedient. She noted, however, that the retarded children compared favorably with regular-progress children in quietness, calmness, quarrelsomeness, stubbornness, excitability, and talkativeness. But in a later investigation by Sandin (38), teachers rated slow-progress children less favorably than their regularly-promoted classmates on seventeen out of twenty behavior traits.

Rather poor social adjustment among nonpromoted pupils was also observed by Sandin (38). He examined the adjustment of over three hundred slow and regular-progress pupils in the elementary grades by means of interviews, general observations, sociometric tests, pupil ratings, and questionnaires. It was found that repeaters seldom received the social approval or acceptance of the regularly-promoted. The findings of Morrison and Perry (29) was confirmatory of this point. These investigators studied the acceptance of overage pupils among fourth, fifth, and sixth grade children and observed that the average child had a significantly lower choice status than his peers. Somewhat contradictory, however, is Taylor's (41) findings that children tend to choose play companions on the basis of mental age rather than chronological age.

A well-controlled study by Goodlad (17) offers further evidence. He equated a group of fifty-five promoted second-grade pupils with a group containing a like number of nonpromoted first-grade pupils on the basis of mental age, chronological age, and achievement. The California Test of Personality, (Primary), and sociometric "best-

friend " questions were administered to both groups at the beginning and end of the school year. The Haggerty-Olson-Wickman Behavior Rating Schedules were completed by each pupil's teacher at the end of the school year. Scores for the two groups were compared to determine whether or not differences in social and personal adjustment existed. Twenty-nine instances of significant differences were identified. Eighteen of the significant differences favored the promoted group, and eight favored the nonpromoted group. The bulk of the differences favoring the promoted had to do with peer-group relations. The promoted children tended to be more accepted as friends, and less rejected as persons not considered desirable as friends, with the reverse holding true for the nonpromoted. The promoted pupils were, however, more disturbed personally over their school progress, and home security, than were the nonpromoted.

The bulk of the research findings on the social-personal development aspect of the promotion problem strongly suggests

... the closer affiliation of undesirable social and personal adjustment characteristics with nonpromotion than with promotion. Although the exact causal nature of this affiliation cannot be ascertained with finality, there are clear indications that nonpromotion is the less defensible educational practice (17, p. 325).

Promotion Practices and Attitudes and Habits

Investigations in this area have dealt with the effect of promotion practices on pupils' attitudes toward school work, work habits, and effort. The findings reported have been largely based upon information gathered from questionnaires, or rating scales, completed by pupils and teachers under relatively uncontrolled experimental conditions.

Sandin (38), and McElwee (27), were among the first who noted that nonpromoted pupils disliked school and school work more than promoted pupils. Similar findings have been reported from California (37). In this study questionnaires provided opportunities for both regularly-promoted and nonpromoted children, in grades five and eight, to express their attitudes toward school attendance, teachers, pupils, and grade repetition. It was found that nonpromoted pupils had more negative attitudes toward school than did their regularly-promoted classmates.

Research carried on over a number of years in the Philadelphia public schools revealed that "contrary to frequently expressed beliefs, nonpromotion does not spur pupils to greater action, but it does discourage pupils to the extent that they see little or no reason to put forth effort." (33, p. 2). Additional support for this view is forthcoming from investigations described by Farley, Frey and Garland (14), Brundage (6), and Cheyney and Boyer (9).

Farley (13) sought to determine the cumulative effects of repeated nonpromotion on pupil effort. His subjects were over three thousand children in grades five and six. Over forty per cent had failed at least once, and seventeen per cent had failed three or more times. A negative correlation was observed between chronological age and achievement when mental age was held constant. This was taken by Farley as an indication that these pupils were not doing school work commensurate with their ability. He was led to the conclusion that repeated failure and retardation defeat their purpose, for rather than encouraging effort they discourage it.

Otto and Melby (31) looked at this problem in a somewhat different fashion. Their purpose was to discover whether pupils threatened with nonpromotion make greater, less, or the same academic progress, as would pupils who were assured of promotion.

Experimental and control groups of both second and fifth grade pupils were used. Insofar as possible, similarity of conditions for both the experimental and control groups were maintained, with the exception of constant reminders of promotion for one group and nonpromotion for the other. No significant differences in achievement, as measured by standardized tests, were observed between the groups. No were there any significant differences noted between various I.Q. levels. Otto and Melby raised the question, however, as to what the long-range effect of the assurance of promotion on achievement would be.

The work habits of nonpromoted pupils were studied by Huddleston (20). He found them dependent on others, easily distracted, and only sporadically interested in their work.

On the basis of reported research in this area, it appears that Otto's (30) claim that nonpromotion seldom improves pupil interest and application stands without serious challenge.

Promotion Practices and School Holding Power

A small number of investigators have concerned themselves with the effect of promotion practices on the holding power of the school. An early suggestion of some relationship came from Sandin's (38) observation that twenty-six per cent more nonpromoted than promoted pupils wished to quit school as soon as possible. Later studies reported by Linkinogger (24), and Woellner (44), have shown that a history of nonpromotion is symptomatic of children who leave school at an early age. As has been noted by Kitch (22), available evidence points to a strong positive relationship between grade retardation and poor holding power.

Summary

In total, the research which has been conducted to date in schools in the United States strongly suggests that low-achievers make as good progress in school when they are promoted as and often better than when they are nonpromoted. It has been shown, however, that this conclusion stems, in large measure, from research studies which failed to control other factors, likely to be influential in determining school progress. In the next issue, the writer will report on a study which sought not only to check the applicability of these findings to a large urban Canadian school system, but also aimed at some measure of control over variables not considered in previous studies.

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THE INTER-DISCIPLINARY APPROACH IN THE TRAINING OF SCHOOL ADMINISTRATORS

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Substantial progress has been made during the past few years in identifying the basic characteristics of good training programs in school administration. This was an impression gathered by the writer during a recent trip which he made to several university centres in the United States. One of the characteristics has been chosen for brief comment in this article.

Training programs in school administration have changed significantly during the past twenty years. Twenty years ago the typical program consisted of a few general-purpose courses aimed primarily at developing the technical skills which school administrators needed to have. Now most programs have been expanded to include a greater variety of activities aimed at developing not only technical skills but certain conceptual and human skills too.

One result of this expansion is a growing realization that certain university disciplines outside of education have contributions to make. In particular the social science departments are recognized as having something special to offer. During the past ten years considerable study and experimentation have been devoted to identifying these contributions and making the most effective use of them in the training program.

Various procedures have been tried. The earliest was merely to ask students to include in their individual programs one or two of the more appropriate courses from among those already being offered by the co-operating departments. More recently there has been experimentation with inter-departmental advisory committees, joint research teams, and inter-disciplinary seminars. All such procedures have apparently met with a measure of success somewhere, and each has undoubtedly contributed in some unique way to the achievement of the over-all goal. Because of certain problems associated with each of them, however, the success of any one seems to depend in large measure on the particular circumstances under which it is employed.

During his trip the writer heard many favorable comments on the use of inter-disciplinary seminars. This particular procedure, therefore, has been selected for special mention here. There are a number of universities in the United States where inter-disciplinary

seminars of some kind have been organized. Among the universities which he visited, the writer was particularly impressed with the work being done at the University of Oregon. For this reason, and for purposes of illustration, a brief description of the organization and functioning of the three seminars in operation at Oregon will be given in the following paragraphs.

One of the seminars is entitled "Research Seminar on Community Analysis." As the title indicates, it is concerned mainly with research in the field of social science. At the time of the writer's visit to the University of Oregon the seminar was meeting for one two-hour session per week to analyse and interpret data which had been gathered earlier during the course of a survey of two local communities.

At the meeting of the seminar attended by the writer there were three professors and eight students. The professors had come from different branches of the university, one from the School of Education, one from the Department of Sociology, and one from the Department of Political Science. The students, too, had come from different department—the same three as those from which the professors had come—which gave this particular seminar a truly inter-disciplinary character.

On the afternoon of the writer's visit the meeting was devoted to hearing and discussing a report by one of the students. The student, who was majoring in educational administration, had analysed the responses to two questions from the community surveys having to do with the "ideal" and "actual" roles of the school superintendents in those communities. His advisor on this particular occasion was the professor from the Department of Political Science. After the presentation, questions were asked by other members of the group about the data, the method of analysis, and the findings. Frequently these questions led to a consideration of matters of basic importance not only in the interpretation of the research data but also in the carrying out of the research itself.

The two other seminars operate during summer quarters only. One is entitled "Seminar on the Scope and Method of the Social Sciences," and the other "Seminar on the Nature and Problems of Administrative Behavior." During the eight weeks of the summer quarter each seminar meets two hours per day, four times per week. Both seminars have been in operation for several years and each one normally enrolls from fifteen to twenty doctoral candidates in educational administration. For the past two summers the W. K. Kellogg Foundation has made it possible for the University of Oregon to offer five study grants each summer to encourage interested faculty members from other universities to attend these seminars.

The seminar on the scope and methods of the social sciences brings together six faculty members, five from the social science disciplines and one from the professional field of education. The social sciences represented are anthropology, economics, political science, psychology and sociology.

During the first few weeks the basic concepts and materials in the social sciences are reviewed. This is done, in part, by having each of the faculty representatives from the social science disciplines sketch the historical development of his particular discipline and indicate briefly its present state. The remaining weeks are then spent largely in exploring a variety of current social problems and their relationship to education. Some time is also devoted to analysing specific problems in school administration, particularly as they appear in the broad social setting with which the seminar is primarily concerned.

The seminar on the nature and problems of administrative behavior is designed chiefly to develop understandings and skills in the field of human relations. The professors involved include one from the School of Education and three others, one from each of the Departments of Business Administration, Political Sciences, and Psychology.

This seminar employs the case-study approach and gives particular attention to administrative processes such as communications, staff relations, and decision making. The presence in the seminar of representatives from several disciplines ensures that each of the cases studied is viewed from more than one vantage point.

This description of the three Oregon seminars, though very brief, is suggestive, perhaps, of most of the advantages claimed for the inter-disciplinary approach. Among the persons who have been most closely associated with inter-disciplinary seminars there is a firm belief that the participation of professors from other departments results in a better general understanding of the work of the school superintendent in a modern community. It is also believed that other and more specific outcomes, chiefly in the form of clearer conceptual understandings and better developed human skills are also possible.

These same persons, however, are the first to point out that the institution of a genuine inter-disciplinary approach is not without its problems. At both the University of Oregon and other centres the writer was told of difficulties which had been encountered. When professors from several departments are brought together to form a team, questions about allocating costs to different budgets and balancing staff loads must be answered. Furthermore, the success of any team effort depends in no small measure on the will-

ingness and ability of the members to work together; so that interests and the personal qualities of the professors who are invited to participate must also be carefully considered.

There is presently a growing conviction in universities where the matter has been given serious study that a training program in school administration is a program of professional education rather than merely a program of advanced graduate study in a particular field. If one accepts this view, and at the same time observes that all professional programs typically depend on other university disciplines for their basic training, one must conclude that the development of an inter-disciplinary approach in the training of school administrators deserves continued study.

AN EXPERIMENT TO TEST THE EFFECTS OF WRITING FREQUENCY AND GUIDED PRACTICE UPON STUDENTS' SKILL IN WRITTEN EXPRESSION

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Need for the Study

In recent years the complaint that graduates of our secondary schools and colleges are unable to write effective English has been causing educators considerable concern. From laymen, teachers, and university instructors, various suggestions for improving instruction have been forthcoming—not all of them supported by experimental evidence: the schools must “go back” to teaching formal grammar; the schools must teach “functional grammar”; the schools must teach “structural grammar”; the schools must abandon objective tests in favor of essay examinations, and the schools should “forget the frills and concentrate upon teaching the three R’s.”

However, most educators in the field of English emphasize that, if a student is to learn to express himself clearly, accurately, and interestingly in writing, he must have as much practice as it is possible to give him during the time he is attending our educational institutions.* This unanimity concerning the *need* for practice does not extend to the *kind* of practice believed to be most beneficial. One group of English specialists express the point of view that the marking of all errors on students' papers, the placing of grades upon themes, and the forcing of students to revise and correct material after it has been returned by the teacher may inhibit free expression and thereby have an adverse effect upon the students' desire to write.† Other specialists believe that the teacher must make every effort to help the student to discover his errors, to correct these errors, and to endeavor to eliminate them from his writing.‡

*See, for instance, Charles C. Fries, *American English Grammar*, p. 128; Commission of the English Curriculum, *The English Language Arts*, p. 307; Leon Mones, “Theory and Practice in Language Teaching,” *School and Society* (July 8, 1950) pp. 21-22; and Professor Strang Lawson, *California Journal of Secondary Education* (February, 1953) pp. 115-117.

†This point of view is expressed by Paul Roberts, in the preface to his *Patterns of English*, pp. ii-iii; Marian Sheridan, “Can We Teach Our Students To Write,” *The English Journal* (June, 1951) pp. 323-324; and Hughes Mearns, *Creative Youth*, pp. 8-10.

‡This “prevision, writing, criticism, and revision” point of view is expressed by Lucia B. Mirrielees, *Teaching Composition and Literature*, pp. 35-56; Dorothy Dakin, *How to Teach High School English*, p. 5; and Alfred H. Grommon, “Preparing High-School Students for College Composition,” *The California Journal of Secondary Education* (February, 1953) pp. 115-117.

To date, there is limited experimental evidence concerning the value of writing practice and the kind of practice that is most effective. During the past thirty years, many investigations have given certain conclusions concerning the kinds of errors students make, the frequency of spelling and punctuation errors, and the effectiveness of a variety of methods in improving students' usage. However, experiments in which students were asked to write regularly under various kinds of guidance are limited in number and scope. In the Purdue experiment, Lokke and Wykoff concluded that an increase in the amount of writing required of college freshmen reduced student failures by 66% and improved final semester grades by 60%.* These results are contradicted by Dressel, Schmidt and Kincaid who, after using 99 students in a writing-frequency investigation, conclude that "Mere frequency in writing material in courses other than English is insufficient to improve the quality of students' written expression."†

The Problem

These conflicting theories and conflicting experimental results served as bases for the problem which was investigated at the University of Alberta during the 1956-57 term. Specifically, the problem was this:

What kind of regular weekly practice in writing will result in significant improvement in the skill of the students receiving the practice?

Design

The experimental population was 257 freshmen registered in the Junior Elementary teacher-training program—a one-year "emergency" course designed to train teachers for Alberta schools. The merits or defects of such a minimum training period, much debated among Alberta educators, need not concern us here. For this investigation, however, the Junior Elementary Program had several merits, including the following:

1. All students registered in the program must possess a high-school certificate; that is, all students have taken a minimum of one hundred high-school credits, including three years of English and three years of social studies.
2. All students in the program take the same university courses, spend an equal numbers of hours in class, are taught by the same group of instructors, have the same library facilities, and write the same mid-term and final examinations.

*Virgil Lokke and George S. Wykoff, "Double Writing in Freshman Composition." *School and Society*, 68 (December, 1958) pp. 437-439.

†Paul Dressel, John Schmidt, and Gerald Kincaid, "The Effect of Writing Frequency upon Essay-type Writing Proficiency at the College Level." *Journal of Educational Research*, 44 (December, 1952) pp. 285-291.

For this investigation, the 257 freshmen were placed in six classes by the random numbers procedure.[†] The six classes, named Class A, B, C, D, E, and F, were then divided into three groups with two classes in each group. The groups were called Group C (control group), Group W ("writing" group), and Group R (writing and revision group).

To provide data for the measurement of improvement in writing skill and in knowledge of effective expression, all students in all the groups were given a set of tests during registration week (the last week in September) and parallel forms of the same tests at the conclusion of the experiment (the last week in March). The following tests were used:

1. Cooperative English Test A (Mechanics of Expression).
September: Form Z; March: Form X.*
2. Cooperative English Test B (Effectiveness of Expression).
September: Form Z; March: Form X.
3. An essay written during a fifty-minute period in September, and a second essay written during a fifty-minute period in March.

During the university year between September, 1956 and April 9, 1957, the three groups of student were treated in the ways outlined below:

1. Group C, the control group, followed the regular Junior Elementary program of studies.
2. Group W, the "writing" group, followed the same program as did Group C. In addition to this program, the students in Group W wrote one essay of approximately 500 words each week for sixteen weeks. The essay topics were assigned by each instructor in turn. That is, during the first week the English instructor gave an assignment; during the second week the assignment was given by the instructor in primary methods; during the third week the assignment was based on a topic in social studies, and so on throughout the term. This means that each student in Group W wrote one essay in each subject-matter area during the fall term and one essay in each area during the spring term. The assigning of the essay topics, the delivery of the assignments to the instructors, the reading of the papers, and the return of the papers to the students all followed a definite time-schedule which was

[†]The tables used were those of Sir Ronald Fisher and Frank Yates, *Statistical Tables for Biological, Agricultural and Medical Research* (London: Oliver and Boyd, 1953). pp. 116-119.

*The tests are published by Educational Testing Service, 4640 Hollywood Boulevard, Los Angeles 27, California.

placed in the hands of all students, all instructors and all readers participating in the investigation.

3. Group R (the "writing and revision" group) followed the same program as Group W, including the writing of a 500-word essay each week. These practice essays of both Group W and Group R were read by qualified readers—graduate students working at the Faculty of Education in the subject-matter fields for which the essays were assigned. However the treatment of the Group W essays differed from the treatment of the Group R essays in the following ways:
 - (a) For the Group W essays, no errors in the mechanics of writing were indicated in the body of the material or in the margins; that is, no marks appeared upon the paper except a three- or four-sentence commentary at the end. The readers of the Group R essays, on the other hand, made every effort to mark all papers thoroughly, indicating in the body of the paper and in the margins, or in both, all errors in spelling, capitalization, punctuation, usage, grammar, sentence structure and paragraphing.
 - (b) Paragraph commentaries were written at the end of all papers. The only difference in the comments placed upon the papers of the two groups was that the readers attempted to emphasize the good qualities (and to be as commendatory as possible, in view of the quality of the writing) of the papers of Group W, and to be as critical as necessary in the comments placed on the papers of Group R.
 - (c) No grade of any kind was placed on the papers of Group W. The papers of Group R received two grades—one for content, and the other for the degree of freedom from mechanical errors. Thus, a grade of 85/30 would indicate that a student had good material, effectively organized, but that his essay was weakened by numerous errors in spelling, grammar, punctuation, usage, or sentence construction.
 - (d) After the papers of Group W were read, they were returned to the students with a brief encouraging comment. No follow-up work was required; that is, there was no suggestion that the students were responsible for any revision, rewriting, or correction of errors. The returned papers of Group R were discussed and revised during a class period or a part of a class period. The average time devoted to this discussion and revision was 35 minutes per essay, so that Group R devoted approxi-

mately nine hours during the year to this discussion and revision.

The follow-up work was conducted by the readers. In general, it consisted of a few general comments about the papers, the reading aloud (by the readers) of parts of papers which were effectively written, discussion of techniques used in these examples of effective writing, student correction of their own errors, and attempts to revise sentence construction or paragraph organization that required improvement.

The foregoing paragraphs indicate that the treatment of each experimental group was an attempt to implement each of two different points of view concerning the best kind of practice. The treatment of Group W essays was based upon the "freedom and encouragement" concept, while the general treatment of Group R essays was based upon the "prevision, criticism, and revision" concept. The two points of view are summarized in the second paragraph of this report.

After the final testing of all groups was completed in April, the initial and final tests were scored and the resulting data analyzed to determine whether any one of the three groups showed any improvement that was significantly different from that of the other groups.

The Cooperative Tests were machine scored at the Alberta Department of Education. The essay tests were scored by two experienced high-school English teachers, both of whom graded each paper independently, using a detailed scoring key similar to that used by the Department of Education for the grading of the essays on Grade Twelve Departmental Examinations. The identity of the writer of the paper was not known by the raters. The rater reliability coefficient as estimated by the Pearson Product Moment Formula was .89. This high degree of consistency between the raters was secured by a preliminary practice period, by discussions of the use of the score-sheet, and by a discussion of the scores given to every twenty-fifth paper by each rater.

Treatment of Data

After all scoring had been completed, the significance of the differences between the means of the initial scores and the final scores was tested by analysis of variance and covariance. The following results were obtained from these analyses:

1. Both Group W and Group R showed significant gains over Group C on the Mechanics of Expression test.

2. No group showed a significant gain over any other group on the Effectiveness of Expression test.
3. Group R showed a significant gain over both Group W and Group C on the Essay tests. Group W did not show any significant gain over Group C on these tests.
4. The scores of the three groups on the final examinations in the university subject-matter fields studied during the year did not differ significantly.
5. Since the revision group showed highly significant gains over the other two groups on the essay tests, these tests were subjected to further analysis to discover the particular skills that appeared to contribute most to this gain. The data for this analysis were the sub-scores on the scoring keys used by the raters. The following were the categories into which the scoring key had been divided: Significance of Material, Evidence of Critical Thinking, Originality, Title, Introduction, Logical Sequence of Paragraphs, General Coherence, Effective Conclusion, Variety in Sentence Structure, Fluency, Diction, Figures of Speech, and Mechanical Errors.

The analysis of variance of the pairs of sub-scores indicated that the total significant gain of Group R was composed of significant gains over Group W in Significance of Materials, Title, and Introduction. Gains in Sentence Variety and Figures of Speech approached significance at the five per cent level. Group R gained significantly over Group C in Title, Introduction, Variety in Sentence Structure, Fluency, Diction, and Figures of Speech. Group W did not show a significant gain over Group C in any category, though gains in Variety, Diction, and Figures of Speech approached significance at the five per cent level.

Conclusions

The conclusions and implications that follow appear valid for this investigation.

1. The practice period caused Group R and Group W to improve in the skill and knowledge measured by the Cooperative Test on Mechanics of Expression, but this gain was, rather surprisingly, a little greater for the writing group than for the revision group. Further, though these gains in knowledge of mechanics showed significance on the Mechanics test, they were not great enough to result in significant decrease in the Error Rate on the essay test.
2. Group R improved sufficiently in general writing skill to show significant gains over both of the other groups in total

score on the essay test. In general, this gain in total score was composed of significant or substantial gains over the other groups in Significance of Material, Title, Introduction, Sentence Variety, Fluency, Diction, and Figures of Speech. It is worth noting that these gains were largely in the categories involving selection of words and composition of sentences. Gains in Critical Thinking, Originality, Logical Organization, and Paragraph Unity were not statistically significant.

3. The scores made by the three groups on the final university examinations were not significantly different. The students in Groups W and R who had to write one practice essay each week may have had less time to devote to reading and study of subject matter. However, it is possible that any loss resulting from the extra writing commitment was offset by knowledge gained during the preparation of the essays and by increased skill in writing that may have enabled the practice groups to compete successfully with the control group on final examinations. There is another possibility—that the practice groups adjusted to the extra commitment by devoting more total time to their university work, so that their subject matter received approximately the same preparation as that of the control group. If this were true, then the practice essays had neither a positive or a negative effect on the students' performance in final examinations. This problem of the effects of extra writing assignments on students' total performance requires further investigation.

Implications of This Investigation

Since the conclusions presented in the preceding paragraphs are valid only for university freshmen working under the conditions described, further investigations might be conducted with students in junior and senior high schools to discover whether the results of this investigation are supported or contradicted when younger students receive the practice. Other investigations might be designed to learn whether significant gains can be achieved with longer practice periods, with shorter essays (perhaps paragraphs) assigned more frequently, or with all practice essays assigned and marked by the same instructor. Other investigations might attempt to assess the effects of different methods of conducting the practice program. These methods might include the use of prevision, the use of student revision groups, the use of discussion preliminary to the writing, and the use of practice exercises based on students' difficulties appearing in the practice essays.

The foregoing are a few implications for further research. This investigation may have also certain implications for the teaching of written expression.

First, it is apparent that the sixteen essays written by the "revision" group resulted in more improvement than the sixteen essays written by the "writing" group. The important differences in the treatment of the two groups were the more rigorous marking and the opportunity for revision provided by the nine hours that were used in class periods. The extra time devoted to marking and to revision appears to have been productive, since it achieved significant gains in performance.

The essays written in the subject-matter areas, read and graded by subject-matter specialists, resulted in significant improvement, and did not adversely affect examination results of the practice groups. These facts appear to offer support for a school-wide writing program in which each subject-matter teacher accepts responsibility for the assigning and grading of topics in his field. Subject-matter specialists sometimes present two objections to this kind of program: (a) They are not sufficiently skilled in teaching students to write, (b) The loss of class time because of the time devoted to essays will have an adverse effect upon students' mastery of the subject matter. Neither of these objections is supported by the results of this investigation.

The non-significant gains in those categories involving critical thinking and logical organization of material suggest at least two possible explanations. The first is that critical thinking and logical organization cannot be taught. However, there is a substantial body of evidence gathered by such investigators as Curtis, Caldwell and Lunden, Zapf, Daily, Hall, Lazar, Parker, Perry, Fawcett, and Glaser* to indicate that these qualities of writing are teachable. The second explanation is that, in this investigation, the guidance given to students and the discussion during the revision periods did not place sufficient emphasis upon these aspects of writing. The investigator's observations of a number of revision classes suggest that this explanation may be valid; most of the attention of classes seemed to be directed toward the discussion of interesting introductions and statements, the improvement of isolated sentences, the choice of words, and the correction of mechanical errors. This may imply that, in teaching students to write, instruction in how to state ideas needs to be supplemented by much instruction and

*See Edward N. Glasser, *An Experiment in the Development of Critical Thinking*, (New York: Bureau of Publications, Teachers College, Columbia University, 1941) pp. 47-59.

Also, Howard M. Anderson (Editor) *Teaching Critical Thinking in the Social Studies*, (Washington, D.C. The National Council for Social Studies, 1942) pp. 1-175.

practice in the critical assessment of ideas, the making of plans or outlines, and the organization of material into essays that possess logical arrangement and continuity. This means that teaching students to write well cannot be divorced from teaching students to think critically and logically. These two tasks, so closely related to each other, must be shared by teachers in all subject-matter areas. Today there is real need for graduates of our schools who can think critically about the social, economic and international problems we face, and who can express ideas clearly and in a logically organized way. Meeting this need is too important to be neglected in our educational institutions or to be assumed to be the responsibility of the teachers of any one subject.

A SURVEY OF SOVIET EDUCATION

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I. THE BACKGROUND OF THEORY

The Union of Soviet Socialist Republics is one of the few states to commit itself wholeheartedly to an official philosophy. Politicians and publicists of the parliamentary democracies may and frequently do refer to the 'Christian' or the 'democratic' way of life, the two terms nowadays being almost interchangeable; but the Christianity which they assume for their audiences and themselves has little theological content, and they might find it difficult to define their concepts of democracy with any intellectual rigour. The Krushchevs and Ehrenburgs, on the other hand, conceptualize within a very definite philosophical context; their utterances are closely and exactly understood by those schooled in Marxism, but frequently misconstrued by the naive observer. No single factor has contributed more to the misunderstandings which have arisen between the Soviet and the West.

The suggestion has often been made that Soviet leaders in fact pay only lip service to Marxism, that they use Marxist terminology as a guise for their own opportunist devices. The acceptance of this suggestion would, in my view, constitute a serious handicap to the understanding of Soviet policies. Any satisfactory analysis of developments within the Soviet Union since 1917 must take into account the continuing intellectual and emotional commitment of the leadership to Marxist theory. It may be that, especially in the later period of Stalinist power, there has been a peculiarly narrow and rigid adherence to dogma. But we have here a manifestation of two uncompromising beliefs rather than of cynicism.

As much as this is admitted by many students of the Soviet system. There is another error, however, into which the more academically distinguished of these have often fallen. This is the belief that dialectical materialism is not a philosophy in any proper sense of the term. When this thesis is maintained, one of two things is usually meant. The first is that there is no pursuit of philosophy as a higher intellectual subject, no sustained technical interest in or contributions to problems of ontology, logic, epistemology, ethics or aesthetics; all that exists, in this conception, is more or less crude economic and political propaganda. The facts run counter to this impression.

Activity in all fields of philosophy is widespread; at least one year of compulsory study of philosophy is the rule in universities and also in the great majority of other institutions of higher study and training, such as technical institutes; this study of philosophy is not merely of the principles of dialectical materialism but embraces an historical survey of the different schools and thinkers from pre-Socratic to contemporary times; research in the various fields of philosophy takes places in universities in connection with the teaching and learning of the subject, and also in a special institute of Philosophy of the central Academy of Sciences, which institute is made up of a score or more of qualified scholars engaged in full time research which involves no teaching schedule; there are a number of scholarly journals currently publishing articles in all fields of philosophy; books are constantly appearing in large editions, not only works of contemporary thinkers writing as dialectical materialists, but those of the classic representatives of the various schools in the history of philosophy including idealists like Plato and Hegel and transcendental metaphysicians like Kant. (14)

The second sense in which it is often urged that there is no philosophy in the Soviet Union stands up to examination even less well. What the critic usually means in this instance is that there is no philosophy with which he agrees, that the issues which dialectical materialists discuss are not ones which he finds significant, or that he is repelled by the implications of Marx's Eleventh Thesis on Feuerbach, the heart of Marxist thought: the philosophers have only interpreted the world in various ways; the point, however, is to change it. As philosophical analysis has enlisted the imagination of so many young philosophers in the West such an approach towards Soviet philosophy has become progressively more common. Since philosophizing is, fortunately, not practised solely by professional philosophers, it may be remarked that the disinterest of the present intellectual generation in Marxism also seems to be a function of the general retreat of the Western intelligentsia from the positions of social engagement taken up by their predecessors of the 'twenties and 'thirties. But no serious observer of Soviet ways can afford not to make 'a willing suspension of disbelief'. He may understand only in order to reject, but the understanding must precede the rejection. Here he can take a lesson from Marx himself. Although Marx characterized religion as 'the heart of a heartless world', this did not prevent him from analysing religion and religious phenomena in considerable detail. Non-Marxists should be careful not to fall short of the standards set by their great opponent.

It is not easy to discuss Marxism in any definitive fashion within the bounds of a short article. In the first place, the whole of Marxism is not comprised in the Soviet canon. Many of the Western European Social Democratic parties, while bitterly opposed to Soviet Communism, claim allegiance to the general principles of social analysis enunciated by Marx. Trotskyism was not assassinated with Trotsky, and has gained fresh adherents with the recent denigration of Stalinism. And many members of the intellectual professions in

the West, particularly historians, economists and sociologists, are conscious and unconscious neo-Marxists, the sources of their theorising being obvious to the initiate if not always to their reading publics. Secondly, Marxism is not nearly such a dogmatic philosophy as a perusal of the directly polemical articles of the last decade of the Stalin era would lead one to suppose. Its application in many areas of study is relatively sketchy and incomplete, and is the subject of considerable argument among Marxists themselves. Nor is it at all unlikely that recent changes in the Soviet Union may bring about a radical restructuring of Communist philosophy to fall more into accord with mid-twentieth century conditions.

The Philosophy of Marxism

When set in the context of the irrationalism and flight from certainty which has distinguished 'bourgeois' philosophy in the unhappy years since 1914, Marxism has the appearance of a Victorian survival. Its main assertions can be phrased in words of a deceptive simplicity. It makes the basic assumption, which has of course also been made by a number of other philosophies, that the world of experience, for practical purposes identical with the 'real' world, is unified and not disparate. It goes on to insist that men, although themselves enveloped in the world of experience, can nevertheless apprehend its developmental processes, discover the way in which it moves and changes. In proportion as they apprehend correctly, they become progressively more capable of imposing their own patterns of control, they become more 'free'.

Historically speaking, this increase in understanding and power, this advance to control, is associated with changes in the power relationships within society. Feudalism ousts slavery; the bourgeoisie throw off the restricting shackles of the feudal order; finally the proletariat 'expropriates the expropriators' and paves the way to the classless society and the victories of Communist man. We have here, at least so it insisted by the Marxists, no fateful unveiling of a preordained historical pattern. Man in society, in any society, develops ways of interpreting his experiences; in fact, such ideologies are essential to social living. Their nature is determined by the economic relations of the society in the context of which they are produced. But, as often emphasized by Marx and Engels, this determination, although fundamental, is not necessarily direct and such elements of the 'superstructure' as law, religion, philosophy, etc, acquire in time a conditional autonomy and function also in terms of their own laws of development. Marxism is not to be identified with economic determinism, although economic determinists like Charles Beard and Marxists sometimes come to similar conclusions, and some professed Marxists, notably the Soviet

historian Pokrovsky, have seemed to prefer simplistic economic interpretations of events. The distinction between the two approaches is drawn most clearly by Engels:

According to the materialist conception of history the determining element in history is *ultimately* the production and reproduction in real life. More than this neither Marx nor I have ever asserted. If therefore somebody twists this into the statement that the economic element is the *only* determining one, he transforms it into a meaningless, abstract and absurd phrase . . . There is an interaction . . . in which, amid all the endless host of accidents (i.e. of things and events whose inner connection is so remote or so impossible to prove that we regard it as absent and can neglect it), the economic movement finally asserts itself as necessary. Otherwise the application of the theory to any period of history one chose would be easier than the solution of a simple equation of the first degree . . . History makes itself in such a way that the final result always arises from conflicts between many individuals wills, of which each again has been made what it is by a host of particular conditions of life. Thus there are innumerable intersecting forces, an infinite series of parallelograms of forces which give rise to one resultant—the historical event. This again may itself be viewed as the product of a power which, taken as a whole, works unconsciously and without volition. For what each individual wills is obstructed by everyone else, and what emerges is something that no one willed . . . But from the fact that individual wills . . . do not attain what they want, but are merged into a collective mean, a common resultant, it must not be concluded that their value $=0$. On the contrary, each contributes to the resultant and is to this degree involved in it . . . Marx and I are ourselves partly to blame for the fact that younger writers sometimes lay more stress on the economic side than is due to it. We had to emphasize this main principle in opposition to our adversaries, who denied it, and we had not always the time, the place or the opportunity to allow the other elements involved in the interaction to come into their rights. (3)

It is possible to accept the social and economic interpretations presented above without coming to grips with the specific Hegelian patterning which underlies Marxist thought, and many working Communists know their trade union history better than their dialectics. Marxism in its more philosophical aspects has inherited from German classical philosophy a special terminology which is both recondite and mystical to the non-adept. Nevertheless, in the final analysis the foundations of Marxism are to be sought in its special understanding of the Hegelian dialectic, in its distinctive view of the nature of reality. The most recent authoritative summary of the essential characteristics of dialectics is that of Stalin. It has the major advantage for the newcomer to Marxism that it is not framed in Hegelian language. The summary runs as follows:

(a) phenomena are originally connected with, dependent on, and limited by, each other;

(b) phenomena should be considered from the standpoint of their movement, change, and development;

(a) change is no mere quantitative change, but at certain stages

leaps in quality arise, as the natural result of an accumulation of gradual, quantitative changes;

(d) Internal contradictions are inherent in all things and phenomena, for all things have a past and a future, something dying away and something developing. The struggle between these opposites constitutes the internal content of the process of development and of the transformation of quantitative changes into qualitative. (15)

It may easily be seen from this brief formulation that the Marxist dialectic is as closely linked with the Communist world view as was Hegel's own dialectic with his exaltation of the Prussian State. What must interest us more at this point, however, is that we can find in Stalin's statements certain premises of Marxist thought which place it squarely in opposition to recent philosophical thought in the non-Communist countries. These are:

- (1) that the nature of reality is discernible by man;
- (2) that natural process is deterministic in character;
- (3) that the same fundamental laws govern the operation of natural process and the behaviour of man in society;
- (4) that 'progress' is an integral part of natural change;
- (5) that significant change is always of a revolutionary nature.

The conventional Marxist analyses every situation with which he is confronted with these premises in mind. For this reason Soviet texts even in fields far distant from philosophy tend to be liberally sprinkled with references to Marx, Engels, Plekhanov, Lenin, and, until recently, Stalin. (Such references are, of course, also at least a superficial guarantee of doctrinal orthodoxy.) This continual appeal to authority is inclined to grate on readers outside the Soviet Union, even those addicted to the writing of research papers, but to reject it simply as an example of intellectual totalitarianism in action is to put ourselves beyond any possibility of comprehension of the Soviet dynamic. If we wish to appreciate Soviet thought and practice in any area, including that of education, we must borrow temporarily the attitudes of the functional anthropologist, and consider equally the beliefs and the Sputniks, the social myths and the feats of the constructional engineers.

Marx, Engels, Education

Marx and Engels made only passing reference in their writings to the theory and practice of education, and much of this emerged merely as a by-product of their general critique of capitalism. Their attitude towards education under capitalism can be summed up in Engel's statement—"the bourgeoisie has little to hope, and much to fear, from the education of the working class" (4). At the same

time they recognized that it was necessary for industrialists to see that workers received an essential minimum of education in order that industry should be run more efficiently. But even this trifling allocation of educational facilities to the poor was made with reluctance. "Since the bourgeoisie vouchsafes them only so much of life as is absolutely necessary, we need not wonder that it bestows upon them only so much education as lies in the interest of the bourgeoisie" (5). Marx is particularly attacked bitterly the educational clauses of the English nineteenth-century Factory Acts, defining their results as 'intellectual desolation' (8).

However, even in the Factory Acts, Marx distinguished the possibilities of future advancement. "The germs of the education of the future are to be found in the factory system." (9) "The success of the Act (the Act of 1847—JM) in this respect (in respect of the combination of elementary education and child labour—JM) gave the first proof that it is possible to combine education and physical culture with child labour, and on the other hand, to combine manual labour with education and physical culture." (10) Writing of education under communism, he asserts that it "will be an education which, in the case of every child over a certain age, will combine productive labour with instruction and physical culture, not only as a means for increasing social production, but as the only way of producing fully developed beings." (11) In 1866, in his instructions to the delegates at the first Congress of the First International, he approved of the "contemporary industrial tendency to attract children and adolescents for the participation in the great business of social production", while regretting the forms this tendency had taken in an exploitative society.

Beyond statements of this kind, which because of their paucity can be easily collected and will almost all be found reported in any serious work on the foundations of Soviet education, Marx spared little time to deal with the problems of education in a proletarian society. Nor do we derive much more in the way of specific comment from a perusal of Engel's works. Writing in 1845, he asserts himself to be in favour of "a proletarian education, free from all the influences of the bourgeoisie." (6) In two of his other works he appears to define what he means by proletarian education in some detail. His aims of education are as follows: education for a complete development of the individual; education up to a mature age; education to develop presence of mind, thoughtfulness; education to enable all individual members of society to participate intelligently in social reconstruction. In terms of our modern experience there is nothing very unusual about these formulations, and most of use would probably be willing enough to accept them,

with certain reservations on the grounds of their simplistic nature. His summary of the educational aspirations of Marxism, set forth at a later date, is more likely to provoke dissent: universal education; education to begin at the earliest period, as soon as the child can dispense with motherly care, such as nursing, etc.; education administered in national institutions at national expense; combination of education with industrial labour.

The 'great principle', as it has been called, which emerges from these musings is the linking of education with material production, the combination of education and labour. In a passage in *Capital*, Marx for once discusses education after the proletarian revolution and characterizes it as 'technological instruction'. "Although the Factory Acts . . . are content to combine elementary instruction with factory work, there can be no doubt that the inevitable conquest of political power by the working class will be followed by a movement in which technological instruction, both theoretical and practical, will win its place in the labour school." (12)

The criticism may be made that the comments of Marx and Engels owe too much to the period in which they were written, and that they did not foresee later educational developments. However, their educational views are also a logical corollary of their general social philosophy, as may be seen from the following quotation.

In a higher phase of communist society, after the tyrannical subordination of individuals according to distribution of labour and thereby also the distinction between manual and intellectual work, have disappeared; after labour has become not merely a means to live but is in itself the first necessity of living, after the powers of production have also increased and all the springs of co-operative wealth are gushing more freely together with the all-round development of the individual; then and only then can the narrow bourgeois horizon of rights be left behind and society will inscribe on its banner: from each according to his capacity, to each according to his need. (13)

If the artificial barriers between thought and practice were to be swept away in proletarian society, much of the task and the responsibility had to be shouldered by education, and to be reflected in educational policies.

The Soviet Interpretation

Whatever our views of the inadequacies of Marx's educational ideas, the fact remains that they have been enshrined in the official educational philosophy of the Soviet Union, and have had an important influence on educational organization, more especially since the late 'twenties'. In the decade following the Revolution there was considerable willingness to experiment and to accept ideas and programmes from the West, particularly from the United States (possibly because of certain superficial similarities between the social theories of Marx and those of John Dewey). These were the

halcyon years of the Soviet experiment, when Communism had the sympathy, if not the actual support, of many progressive thinkers in other countries, and when the major Soviet leaders, the Bolshevik Old Guard, seemed to share a common language of discourse with the intellectual élite of the non-Communist world. Makarenko, now regarded as the Soviet Union's 'master teacher', sometimes writes bitterly of those days, when American progressivism had curdled the pure milk of Marxist doctrine, and his pedagogical methods were looked upon askance by his superiors. Since this period Russia and the West have drifted further and further apart. On the one hand the forced collectivization of the peasantry, the trials of the 'thirties, the systematic elimination of the old Communist intelligentsia, the flight and assassination of Trotsky, and the retreat to Marxist dogmatism, have progressively alienated Western sympathizers. On the other the growth of militant Fascism and the equivocal attitude of certain Western democratic leaders towards it prior to 1939 convinced the Russian leaders, especially Stalin, that the Soviet system was engaged in a bitter struggle for survival and could afford the luxury of freedom of thought and discussion only within certain very limited fields. A consequence of these developments has been the attempt to remodel the Soviet educational system along more definitely Marxist lines, combined with a return to traditional methods of instruction.

However, during the whole period since 1917, one phrase has cropped up consistently in Soviet pedagogical writings. 'Polytechnical education', or, as it is frequently called, 'polytechnism' is the term which the Russians have coined to define that association of education with productive labour regarded as essential by Marx. Besides the natural inclination of Soviet educationists to prefer educational approaches based on primary Marxist theory, the urge to industrialize an agricultural economy (cf. Lenin's remark that communism is soviets plus electrification) accounts for the enthusiasm with which they have tried to work towards a satisfactory definition of polytechnism. The concept has been advocated in several different contexts. In the early days it was felt that preferential educational treatment for workers and their children—the proletarianization of education—was sufficient to ensure polytechnism. When this policy was rejected as inadequate, a variety of instructional and pedagogical procedures were developed.

Among other things, polytechnical education has meant simply a study of applied subjects, a study of principles of agriculture or industrial techniques, vocational training of one sort or another, productive work in school workshops, laboratory work in science courses, the use of visual aids in teaching, excursions to industrial plants, etc. In fact, almost anything short of a textbook or a teacher's word has been referred to as 'polytechnical instruction' at one time or another. (2)

In the housecleaning of the late 'twenties', great emphasis was placed on polytechnism. The whole elementary and secondary-school structure was geared to vocational education. General education was regarded as being less important than practical technical instruction. However, this stress on monotecnism, as it was called, soon lead to a decline in the level of scholarship, and in the early 'thirties a more sober definition of polytechnical education in practice led to a resurgence of theoretical studies and the liberal arts. By 1937 a definite pattern had been established which has so far persisted without significant amendment.

Polytechnism as it now operates in Soviet schools consists of a firm grounding in the applied sciences, chemistry, physics and mathematics, coupled with a measure of practical technical training, and some instruction in the main principles of industrial production; vocational training without some background in theory is looked on as an inadequate preparation for life and work. This implies the inclusion in curricula of such topics as the following:

- (1) methods of generating, transmitting, and using electrical power;
- (2) the general scientific principles of function and structure of machines, including the electric motor, the steam engine, the internal combustion engine, and the turning lathe;
- (3) the physical principles of atomic energy;
- (4) the chemistry of the more important substances and the methods of using them;
- (5) the theory and practical means for understanding and controlling growth of plants and animals;
- (6) the electrical, mechanical and chemical aspects of scientific agriculture. (1)

The effects of the polytechnical curriculum may be seen in the tremendous scientific advances made by the Soviet Union in recent years. Contrary to opinions sometimes expressed by Western educationists, however, study of modern Soviet curricula does not suggest that this progress has been made to the cost of general education. We may quarrel with the indoctrinating aspects of the Soviet educational system; it has been described to me as operating with a terrifying efficiency. Yet the fundamental aims of polytechnism are not exhausted with the creation of a scientifically knowledgeable populace and an élite of scientific workers. Education in the Soviet Union is considered to have its part to play in the building of the new social order, in the advance from capitalism through the transition period of socialism to the true classless society. In bourgeois society, according to Marxist thought,

developmental potentialities are restricted by the divorce between life and work, by man's alienation from the products of his labour. Only in a world where human relations and productive forces are integrated is it possible, on the one hand, to plan for genuinely harmonious and co-operative communal living; and, on the other, to foster the development of rational and creative human beings. Polytechnical education is designed to educate Communist man; on its success or failure in this regard hangs, to an often unrecognized extent, the ultimate fate of the Soviet system.

No account of Soviet education would be complete without mention of Anton Makarenko, now regarded in his own country and abroad as the leading Marxist educational theoretician. Already in 1917 sympathetic to the principles of the Revolution, in 1920 he was entrusted with the organization of a colony for homeless children, later named the Maxim Gorky Labour Colony. His remarkable success with these unfortunate waifs and strays of revolution and civil war led to his appointment in 1927 to the post of head of the Dzerzhinsky Labour Commune, a newly-founded institution for orphans and homeless adolescents. Here he worked until a few years before his death in 1939. The book in which he details his educational experiences, the *Road of Life*, has been described as the essential quarry of Marxist education. In so far as there is any content to Marxist educational theory, this may be attributed almost to him alone.

Makarenko accepted without question the basic positions of Marxist philosophy, and rejected unconditionally the educational theories of the West, which he lumped together under the heading of 'pedology'. He saw as his main goal the development in children of such traits of character as were "necessary to the Soviet State in the era of the dictatorship of the proletariat, of the establishment of classless society."* (7) At the same time he acknowledged that this was not a permanent goal, but would change as society changed. "The demands of society are in fact limited to one epoch whose scope is more or less clearly defined. We can be absolutely sure that the demands made on the next generation will differ from those society made on us."

Makarenko's pedagogical methods follow logically from his insistence on the nature of his task, that of educating future citizens of a socialist community. Since human beings only find true freedom in social living, and respect for self in respect for others and for the goals of society, the first consideration of the teacher must be to transform a raw group of children into a 'collective', to

*All quotations in this part of the article are taken from Makarenko's *The Road to Life* (Eng. trans., 1951).

develop common standards of behaviour and a common will to action, to imbue individuals with a consciousness of community. This cannot be done by talk, or even by imposed co-operation within the artificial classroom situation. Groups of children must undertake socially necessary labour, tasks in which the effects of lack of initiative and lack of discipline may be immediately seen and corrected. Especially is discipline essential; without discipline no satisfactory communal action is possible. "For this we had our revolution, that our personality shall be free, but the form of our society is discipline." Yet the building of the collective is no easy task, and may only be carried out by skilled teachers. It is not hard for children under the temporary influence of a dominating personality to give the appearance of functioning as an integrated group. But consciousness of the developing process of integration must accompany the integration itself. Each advance to a higher level of communal organization should generate a further advance. With each victory won over anarchic individualism the role of the teacher recedes in importance, and the developing collective takes over more responsibility for the education of its members, until at last they emerge from school into the larger community disciplined and dependable citizens, and the long-standing breach between man and society is finally healed.

However idealistic we may consider this description of the process of Soviet education, there can be no doubt of Makarenko's own prowess as a teacher, and of his remarkable success in transmuting the worst imaginable juvenile delinquents into self-respecting young men and women. Many of his aphorisms must strike a responsive chord in the hearts of educators everywhere. "My fundamental principle has always been; the utmost possible demands on a person, but at the same time the utmost possible respect for him. One cannot demand great things of someone whom one does not respect." "To educate a man is to furnish him with a perspective leading to the morrow's joy." "What are called high qualifications, confident and precise knowledge, understanding, skill, deft hands, spareness of words and complete abstention from grandiloquent phraseology and a steady will to work—these are the qualities which attract children in the highest degree."

In any case polytechnism and what may be described as Makarenkoism are at present the immediately controlling factors in Soviet educational practice. Behind them loom the massive lineaments of Marxist philosophy. Yet educational policy in the Soviet Union has been in the past subject to sudden shifts of emphasis, the orthodoxy of yesterday has frequently become today's heresy; at any moment a sudden change of line may render this

survey obsolescent. And if there can be no denying the tremendous achievement of Soviet education, this can, if we wish, be attributed rather to the immense physical concentration on the provision of educational facilities, than to the correctness of Marxist thought. Social analysts know, however, that whether a philosophy is true or not matters less than whether people believe it or not. Marx may have been a mythopoeist, but, even if we admit this, we must acknowledge that his myths have inspired the builders of a new kind of society.

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NOTE: There is now in existence a voluminous Marxist literature. To those interested in the general theory of Marxism, which has perforce been covered only very lightly here, I would recommend, in addition to the books mentioned above, the following works: Engels' *The Origin of the Family, Ludwig Feuerbach and the Outcome of Classical German Philosophy*, and *Dialectics of Nature*; Marx's *The Poverty of Philosophy*; Plekhanov's *The Materialist Conception of History and The Role of the Individual in History*; and Lenin's *Imperialism as the Highest Stage of Capitalism, Materialism and Empirio-Criticism, and The State and Revolution*. Some other interesting studies are: Caudwell's *Illusion and Reality, Studies in a Dying Culture*, and *Further Studies in a Dying Culture* (literature); Gordon Childe's *Man Makes Himself and What Happened in History* (archaeology and ancient history); Dobb's *Studies in the Development of Capitalism* (an outline of English mediaeval and modern economic history); Hessen's *The Social and Economic Roots of Newton's Principia Mathematica* (science); and Lilley's *Men, Machines and History* (technology). The three best critical works on Marxism by non-Marxists are, in my opinion, E. H. Carr's *Karl Marx, a Study in Fanaticism*; Karl R. Popper's *The Open Society and its Enemies* (Vol. II); and Joan Robinson's *An Essay on Marxian Economics*.

CHANGES IN IMMEDIATE MEMORY AS A FUNCTION OF AGE AND MEANING*

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Introduction

From the day the telephone was invented, there has been a tendency to use switchboards, cables and circuits as analogies for human and animal nervous systems. The danger in analogies is the temptation to think that something is explained when the only accomplishment has been a translation from an unknown language to a familiar one. Even among many who accepted the fact that the organism had a part to play in the simple stimulus-response theories, little interest was shown in what intervened between sensory input and motor response. In recent years, however, this lack of interest is being corrected (3). As a result, a filing system type of model is coming to be preferred to the switchboard.

Although the experiment to be reported concerns association and might therefore be considered of the switchboard variety, it, in fact, leans heavily on the filing system type of analogy. The problem is that of the organization by the mind of incoming information in different associative relationships. There is some evidence of changes in type of relationship between childhood and adulthood. It is an aspect of this change which the present experiment attempts to investigate. Given three different relationships between two words, which association is likely to occur most readily? The three relationships to be investigated are: similarity in meaning (synonyms), contrast or opposition of meaning (antonyms), and words of identical sound but without apparent meaningful association (homonyms).

When a list of nonsense syllables or meaningful words is learned, the items towards the beginning and towards the end of the series are usually recalled more readily than the items in the middle (e.g. 4, p. 414). The two main schools of learning theory—Gestalt and Connectionist—give rather different interpretations of this. Both, however, agree that the items in the series create some sort of memory trace. One might expect that the trace produced by the first item in a series could help in the recall of a latter item when there is some meaningful association between the two. For example, if the first word in a list were 'Alberta' and the seventh word 'Gas',

*Based in part on a paper read to the 1958 annual meeting of the Canadian Psychological Association.

recall should be easy. This could be considered a form of generalization or positive transfer. Further it ought to be possible to measure the effects of different kinds of meaningful association by the amount of this generalization. When a middle word in a list is the antonym of the first word in the series, is it recalled more frequently than when it is a synonym or a homonym? Is there a change with age, so that one kind of relationship results in easier learning at one age and a different relationship at another?

Design of Study

Subjects

Four groups of subjects were used: two classes of first-year university students, and two each of Grades IX, IV and II, numbering respectively 58, 60, 67 and 54 students. The university students were taking educational psychology in Calgary. The school children were from reasonably representative Calgary schools, although possibly slightly above average. The experiment took the form of a group test, the subjects being tested during a normal class period.

Material

Ten words were presented to the subjects in individual loose leaf books (six inches by four and a half), one word being typed in the centre of every second page. In the case of Grade II children only eight words were used, the fifth and seventh of the normal list being omitted. Nine of the ten words, including the first word 'close', were identical in all lists. The sixth word was randomly varied between the homonym of the first word—'clothes', a synonym—'shut', and an antonym—'open'. The books had A, S, or H printed in the front according to whether the crucial sixth word was an antonym, synonym or homonym. The remainder of the words were culled from monosyllables in Dolch's Basic Sight Vocabulary, consisting of 70% of words found in Grade I readers. This was necessary to ensure that they were recognizable to the youngest group.

Administration

The books were randomly distributed among the subjects in a class. (It can be assumed that the letters A, S or H on the front of the books were meaningless to the subjects.) The subjects were informed that the experiment was a test of memory, although the word 'test' was not used in order to avoid emotional reactions. Sheets of paper on which the remembered words were to be written were circulated prior to the experiment, and on these the subjects wrote their names and the letter A, S or H, whichever happened to be on the book they received. The subjects were forewarned

that there would be a word on every second page, and were asked to inhibit any tendency to verbalize. During the memorization stage the Experimenter said: "Turn, look, turn," at approximately one second intervals, with one second allowed for the looking time. The subjects were told to write the words in any order they wished once they had turned over the last page of their books. There was no time limit for the retention phase, the slowest person setting the pace.

Results

Table I shows the percentage in each group who recalled the crucial word, the fifth word in the case of Grade II, the sixth word in the case of the other groups. (It has already been mentioned that for Grade II children only eight words were used, so that the memory span was not exceeded by too great an amount and the memory stress for the different groups was not too dissimilar.)

TABLE I
PERCENTAGE OF SUBJECTS RECALLING
THE CRUCIAL WORD
(Size of groups in brackets)

	Grade II	Grade IV	Grade IX	University Students
Homonym	68.8 (16)*	80.9 (22)	55.0 (20)	85.7 (21)
Synonym	21.1 (19)	56.5 (23)	47.6 (21)	60.0 (22)
Antonym	57.9 (19)	36.4 (22)	63.2 (19)	53.3 (15)

*Of 16 children receiving the Hononym booklet 11 (or 68.8%) responded correctly.

In examining the table both inter-group and intra-group differences are of interest. Analysis by Chi-square does not reach adequate statistical significance. However, z values of the significance of difference between two proportions attain values of greater than 5% in a number of cases. Although this statistic is intended for large populations and therefore may not be entirely suitable, it does suggest trends which invite further exploration.

At the Grade II level, the difference between synonyms and the other two kinds of associations reaches the 5% level of significance. In Grade IV, homonyms are prepotent, but there is also a significant difference between synonyms and antonyms. In Grade IX, none of the associations is significantly "better" than the others. By the undergraduate stage homonyms are again significantly of 'better' association value than either of the other relationships. It seems therefore that homonyms tend to raise the level of memory in all

groups except Grade IX. Synonymous relationships seem to grow in importance after Grade II. The antonyms run an erratic course, having considerable effect in Grade II, none in Grade IV, more effect than even homonyms in Grade IX and then drop to lowest position once again by the undergraduate level.

Relation to Other Experimental Findings

In comparing the results of this experiment with others having a bearing on the issue, there is the usual difficulty of differing methodology. Riess (6) used a conditioning technique, measuring the amount of galvanic skin response transfer from the original stimulus word to synonyms, antonyms and homonyms. The ages of the groups, as well as the first and crucial words in the present experiment, purposely duplicated those of Riess to allow for comparisons. He too found homonyms of the most consequence in the youngest group, but they definitely decreased in importance in his older two groups. An obvious explanation of the continuing importance of homonymous relations in the present experiment is that this type of rote memory puts a premium on the sound of words, since subjects tend to vocalise, albeit covertly, in order to aid their memory. Riess' conditioning, on the other hand, depended on normal silent reading. The difference in word outline might therefore outweigh the similarity in sound among older subjects. Because of this, perhaps, the increase in importance of similarities with age shows up more clearly in his experiment than in the present one. The course of antonyms in Riess' study was almost as erratic as in the present investigation, but unfortunately the two courses did not run parallel. Different, possibly opposing, factors are operating here and these require more careful investigation. Part of the discrepancy may be due to the fact that Riess used different words for each of his age groups.

Foley and Cofer (1), in an elaborate memory experiment, found that transfer of homonyms in adults was greater than that for synonyms. Although this experiment has been criticized by Osgood (5, page 708), the possibility that the subjects were vocalizing might explain the discrepancy between their results and those of Riess, while agreeing with the findings reported here. (Foley and Cofer had no younger subjects.)

Woodworth (7), in his summary of the literature on Free Association experiments, found that adults give more coordinate and contrast responses than do children. In the terminology used in the present paper, opposites means antonyms and Woodworth therefore supports Riess in showing that these increase with age. Co-ordinate response have not quite the same meaning as similari-

ties, but the implied tendency for adults rather than children to jump to a related, parallel idea fits in with the findings on similarities.

Table II summarises the findings on the order of the associations in the different studies mentioned.

TABLE II
SUMMARY OF FINDINGS ON GENERALIZATION
AND ASSOCIATION

(a)	<i>Recall Order (present experiment)</i>			<i>University Students</i>
<i>Grade II</i>	<i>Grade IV</i>	<i>Grade IX</i>		
Homonym	Homonym	Antonym		Homonym
Antonym	Synonym	Homonym		Synonym
Synonym	Antonym	Synonym		Antonym
(b)	<i>Conditioning Order (Riess)</i>			
Homonym	Antonym	Synonym		Synonym
Antonym	Homonym	Antonym		Antonym
Synonym	Synonym	Homonym		Homonym
(c)	<i>Memory Transfer (Foley & Cofer)</i>			<i>Adults</i>
				Homonyms
				Synonyms
(d)	<i>Free Association (Woodworth's summary)</i>			
	<i>Age 9-12</i>			<i>Adults</i>
	Few opposites			Preponderantly
	Few coordinates			opposites and
				coordinates.

General Discussion

There are some further points of possible interest which came to the fore in carrying out the experiment. Firstly, the problem of reading. As one of the variables was a homonym, the words could not be read to the subjects, even had the testing been administered individually. There is difficulty, however, in finding words with homonyms and synonyms which are easy enough for Grade II children to read. Even the words 'close' and 'clothes' are not exact homonyms (although women have been charged with taking clothes looks at each other). Three of the original Grade II subjects had to be excluded because they could not read at all. Others might have avoided writing words they remembered because of spelling doubts, even though the instructions attempted to re-assure the children that this was not a spelling test. Not only the simplicity of the words but their different extraneous associations at different ages have an effect. The word 'pigs' was the second word in the list and this produced a laugh from both Grade II

classes. This should have been anticipated as 'pig' is almost a swear word at that age. Suffice it to mention that this and other associations altered to some extent the usual shape of the memory curve in a number of cases.

The division into groups by grades also poses a problem. There were some nine year olds in both Grade II and IV—too few for computing a separate group but possibly sufficient to distort the findings. This raises the question of how far such changes as have been found are due to mental age and experience. A parallel problem of age arose with university students; this was arbitrarily solved by excluding the results of those over 25 years old.

Motivation caused no problem, notwithstanding educationalists' concern with this question. Even after a boring task as this type of rote memory, many subjects were interested in their own and their colleagues' results. There is a tendency to underestimate children's enjoyment in using their brains, as Hebb (2) pointed out many years ago.

The errors—both of omission and commission—raise additional questions. Exactly half of both older groups—Grade IX and undergraduates—'recalled' words which were not in the original list, whereas less than 30% of the two younger groups did this. It would be interesting to find out why younger children indulge in this kind of guessing less frequently than older groups. With few exceptions, the inserted words were monosyllables and might be considered an example of incidental learning. (It will be recalled that all the words in the list were monosyllables.) Four 'error' words occurred more than once: these were 'turn', 'look', 'door' and 'open'. 'Turn' and 'look' were words the experimenter used during the testing. 'Door' is meaningfully related to the first word in the list, 'close', as well as to its synonym and antonym. Their appearance in the memorized lists can thus be explained. The intrusion of the word 'open' in the wrong cases among older subjects is odd, but unlikely to be due to cheating. It is probably the result of vocalizing by subjects who really were required to memorize the word. More stringent precautions against this possibility will be made in a planned repetition of the experiment.

It would be premature at this stage to do more than hint at possible applications of the results of this experiment, should they be confirmed. They would have obvious relevance to methods of teaching children of different ages. It might well be found that contrasting examples would be easier for younger children to understand than parallel examples. Humour is another field where changes of relationships could have a bearing on the development of children's understanding of jokes. Puns, it has been said, are

the lowest form of wit, and certainly many jokes based on homonyms become less funny as one grows older. More important is the method of investigation itself. It is simple enough for classroom experiments, and yet could throw some light on many puzzling psychological problems, such as the formation of symbolism, schematic organization and the mediation hypotheses of meaning.

Summary

A list of 10 simple monosyllabic words was presented as group tests to children and adults. Nine of the ten words, including the first word 'close', were identical in all lists. The sixth word was randomly varied between the antonym, synonym and homonym of the first word. The results showed that homonyms raise the level of memory in all groups except Grade IX, synonyms tend to grow in importance above the age of eight and antonyms have no effect at Grade IV.

Acknowledgments

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WHY DID THEY DIFFER? A STUDY OF TWO GROUPS

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The Problem

Teachers often refer to their classes as vintage wines—a good year, or a poor year. Frequently classes within any given year are found to vary significantly. The good classes are highly receptive while the poor classes seem resistant and appear to make little progress. Yet frequently an examination of admission academic aptitude and achievement ratings reveals no clue as to why these classes should differ in their year's performance. Studies of homogeneous grouping such as those reported by Clarke (3) and Dunlop, et. al. (5), seem to offer only a partial explanation. Even in such restricted groups, the "temper" of classes will be found to vary greatly.

The writers of educational psychology texts invariably approach this problem through the concepts of group dynamics. They point out that the characteristics of a group can not be expected to represent a mere summation of characteristics of the individuals comprising the group. Further, it is often suggested that the character of the group exerts a direct influence, either positive or negative, upon the individual. Cattell (2), for example, calls this effect "syntality" and defines a leader as one who has a demonstrable influence on a group syntality. However, little direct factual evidence is offered by most writers on educational psychology to show the relationship of specific types of group-leader structure on the performance of the group as a whole. Schultz (13), must have been thinking of the problem of the varying classes when he wrote:

Performance towards the achievement of a group goal is defined in terms of how closely the group approaches its own optimal performance, rather than how closely it approaches an absolute standard. . . . Often there are practical differences determining what an optimal performance is for a given group. However, for purposes of testing the compatibility postulate, this difficulty can be circumvented by equating groups with respect to ability and varying compatibility . . .

Compatibility refers to the successful operation of interpersonal relation. The less compatible the relation, the more time must be spent in finding ways of dealing with the difficulties. There is less energy available to devote to a task, and there is more internal dissatisfaction . . . (p. 116).

This paper reports a limited and exploratory study of two equal groups having differing degrees of compatibility (referred to in this

paper as cohesiveness of group structure) and of their academic performance.

Design

The investigator had two classes in educational psychology in the one year Junior Elementary (Jr. E.) Certificate program of the Faculty of Education, University of Alberta, who seemed to represent to two extremes of cohesiveness of group structure referred to above. It should be noted that the students in the Jr. E. program are divided alphabetically into classes and these students remain together as a class throughout the day and for the full duration of their year's program. There is, then, ample opportunity for a reasonably stable group structure to form within each class.

On the Christmas examinations, 1958, Class A ranked the highest of the eight Jr. E. classes on eight of their ten courses. On the other hand Class B (the letter designations as assigned for convenience) ranked lowest on seven of the ten courses. Yet there appeared no obvious reason for the disparity in performance. In fact an examination of class admission data revealed no essential difference in the composition of the two classes. Table I points this up. The usual "t" test was used for differences between means, and the χ^2 test for significances.

TABLE I
COMPARISON OF JR. E. CLASS A AND CLASS B ON
THIRTEEN VARIABLES AT THE TIME OF ADMISSION
TO THE FACULTY OF EDUCATION

Admission Variable	Class A			Class B			Statistical Significance of Difference
	N	Mean	S.D.	N	Mean	S.D.	
Sex M	13			15			N.S.D.
F	33			31			N.S.D.
Age	46	19.7	3.8	46	20.3	6.2	N.S.D.
ACE L.	46	62.2	14.6	45	61.1	10.5	N.S.D.
Q.	46	41.4	8.2	46	42.2	8.7	N.S.D.
T.	46	103.6	20.4	45	103.7	17.2	N.S.D.
Coop. Read.	44	21.6	9.1	43	19.1	7.3	N.S.D.
Coop Mech. of Express.	44	103.6	18.7	43	110.2	19.7	N.S.D.
English 30	46	61.5	9.8	46	61.6	9.9	N.S.D.
Social St. 30	46	63.4	8.6	46	62.0	7.9	N.S.D.
Science XII (X)	43	62.6	8.3	46	61.4	7.3	N.S.D.
Foreign Language	31	65.0	8.2	39	63.3	11.7	N.S.D.
Math. XII (X)	30	62.3	7.7	34	59.2	9.7	N.S.D.
XII Average	46	62.1	6.1	46	61.4	6.4	N.S.D.

In spite of similarity of composition the two classes appeared to act and perform differently. Class A moved as a group, had excellent self-discipline, exhibited keen interest in their work, in short, appeared strongly motivated. Class B, on the other hand, showed the opposite qualities. They were disorganized, frivolous, disinterested, and frequently late. In the annual blood drive, Class A responded promptly, having achieved 100% contribution before Class B had reached the 50% mark.

These differences pointed strongly to different sociometric class structures, and it was with this possibility that the present investigation is concerned. Certain uncontrolled and uncontrollable factors were met. While certain courses of the two classes were offered by the same instructors and common examinations administered, other courses were taught by different instructors, some using common examinations, and some using different examinations. These three conditions are noted where appropriate in the analyses of data. The Christmas test results are shown in Table II.

TABLE II

COMPARISON OF THE CLASS MEANS OF THE CHRISTMAS MARKS FOR CLASS A AND B

Course	Instruct.- Examin.*	Class A			Class B			Level of Significance or Difference
		N	Mean	S.D.	N	Mean	S.D.	
A.	3.	42	53.6	9.8	46	67.5	8.5	1% level, favoring B
B.	3.	45	65.3	13.0	45	53.0	10.8	1% level, favoring A
C.	1.	45	71.6	13.5	46	67.7	11.2	N.S.D.
D.	2.	45	67.0	15.8	45	51.3	13.1	1% level, favoring A
E.	2.	45	64.0	15.8	43	57.4	11.4	2% level, favoring A
F.	2.	45	56.0	11.6	45	61.0	8.2	2% level, favoring B
G.	2.	45	59.4	14.3	45	50.2	14.4	1% level, favoring A
H.	2.	45	64.3	7.5	45	58.2	7.6	1% level, favoring A
I.	2.	45	68.1	12.0	46	66.1	10.6	N.S.D.
J	1.	45	57.9	9.8	45	52.0	10.1	1% level, favoring A
	Xmas Ave.	45	62.3	8.4	45	58.8	6.7	5% level, favoring A

*Instructor-Examination Code: 1. One Instructor, Common Examination; 2. Different Instructors, Common Examination; 3. Different Instructors, Different Examinations.

It will be noted that Class A is ahead in six of the courses, equal in two, and behind in two. The average strongly favors Class A.

Earlier Studies

Regarding the relationship of the group structure to group performance, a search of the literature revealed the following

relevant studies. Goodacre (7) found a high correlation between cohesiveness and efficiency rating of U.S. Army reconnaissance teams. In an important study, Schachter, Ellerston, McBride and Gregory (11) reported that the degree of cohesiveness related directly to the influence the group exerted over its members. By having each individual work alone at the task of producing cardboard, they found the direction of this influence could either increase or decrease the individual's output. Van Zelst (15) working in an industrial situation found an improvement in output with an accompanying decrease in per unit labor cost as a result of sociometric grouping of working groups. Schultz (12) found increasing differences in output between cohesive and non-cohesive teams as the cooperative content of the task increased. Back (1) reported greater communication between cohesive groups than non-cohesive groups. Festinger, *et. al.* (6) and Steinor (14) found evidence supporting the hypothesis that cohesiveness and conformity of group members are closely related. Deutch (4) reported that cooperative groups had a high output but the ratings for individual productivity were not always greater for members of cooperative groups.

On the influence of leaders, Haythorn (8) found that individuals possessing strong personality factors of cooperativeness, prestige, efficiency, and insight were popular and tended to facilitate group functioning. Earlier Rosenthal and Cofer (10) found that introducing into a group an individual with an indifferent and neglectful attitude resulted in the group failing to reach mutual decisions and seemed to reduce the confidence of the individual group members in group goals.

Finally, Hemphill (9) found in his study of group size and leadership that the larger the group (more than thirty), the more it would tolerate leader centered direction.

Hypotheses

If the hypothesis of a direct relationship between group cohesiveness and type of leadership is true, as the research literature would suggest, and in light of the evidence of group performance reported to date, the following two conditions should exist for the classes concerned:

- (a) Class A should be more cohesive than Class B.
- (b) Class A should have strong leadership, whether of leadership recognized by the members of the class, or of sub-group leaders recognizing a common leader.

To test these hypotheses, three sociograms were prepared for each class. At the beginning of the spring semester each class

member was asked to note his first, second and third choices from the class membership in answer to the following three questions:

- I. Who are your friends in class?
- II. Whom do you look to as the class leader?
- III. With whom do you compare your marks?

Only the first and second choices were plotted as sociograms. It was intended that questions I and III would indicate the relative degree of cohesiveness of the two classes while question II would identify the leadership structure of each class at that time. The above questions were asked immediately upon the students' return from Christmas vacation and before all the Christmas test papers had been returned. It was, then, an assumption that the leadership and cohesive structure of each class was the same at this time as it had been during the previous month when each class had written its Christmas examinations.

Data

Questions I and III attempted to obtain some assessment of the cohesiveness of the two groups. Consequently, the analysis of the sociograms took the form of assessing the number of reciprocating pairs, i.e., 1 chooses 2, and 2 chooses 1; and the length of the "continuous chains", 1 chooses 2 who chooses 3 who chooses 4, and so on. It was assumed that the number of reciprocating pairs and the length of the continuous chains would give sufficient insights into the two classes from which to substantiate a difference in degree of cohesiveness between the two groups. The summary of this analysis for Questions I and III is given in Table III.

This analysis was premised on the assumption that the number of reciprocating pairs would suggest the degree of non-cohesiveness, while the number and length of continuous chains would represent cohesiveness. First choice patterns were deemed more significant than second choice patterns.

From the above table, it will be noted that there is a marked difference between Group A and B in first choices on both questions in terms of number of reciprocating pairs. Class A has half as many such pairs as Class B. On second choices, however, Class B has the same number of pairs as does Class A's first choices on the same two questions, one less than Class A's second choices for question I and half as many as Class A's second choices on question III. Class A shows only a slight increase in the number of reciprocating pairs on Question I from first to second choice while on Question III the number is doubled. Class B shows a marked decrease in the number of such pairs from first to second choice.

TABLE III

SUMMARY OF ANALYSIS OF CHOICE GROUPINGS ON
FOUR SOCIOGRAMS FOR FIRST AND SECOND CHOICES
ON QUESTIONS I AND III FOR CLASSES A AND B

Class	Choice	Length of Continuous Chains								Number of Reciprocating Pairs
		Question	3	4	5	6	7	8	More than 8	
A	First	I III	1 1	3 1	1 1		1		1 (15) 2 (10, 21)	6 3
	Second	I III	2	1 2	1	1 1		1 1	1 (13) 1 (11)	7 6
B	First	I III	2	2	1	1	3	3	2 (10, 11)	13 9
	Second	I III	1 1	1	1	1		3	3 (9, 9, 11) 1 (12)	6 3

In regard to continuous choice chains, Class A is marked by the number and length of chains. Even on second choice the chains continue to be sustained. Class B, in contrast, is marked by fewer chains particularly in first choices. Only on second choice does the number and length of chains increase.

In summary, it was concluded from the sociograms summarized in the above table that Class A was more cohesive than Class B. Class B seemed to be composed of students who shared a limited concern for group goals and the performance of their colleagues. Class A on the other hand seemed to be composed of individuals whose interest or concerns with others within the class were much broader.

Analysis of the sociograms of both classes in response to Question II, "Whom do you look to as the class leader?" was equally revealing in emphasizing differences between the two classes. Class A had one leader who was named by twenty-eight first choices. There was a small clique of ten students with no clear-cut leader. On the second choice sociogram for Class A, the group broke down into five clusters whose "leaders" choices were interlocked with the dominant leader reported in the first choice sociogram. The leader

with the largest number of second choices was again the same student who was the dominant leader in the first choice.

Class B had a different pattern. The structure of its first choice sociogram closely resembled that of the second choice sociogram of Class A. There were six sub-leaders, one of which was slightly more dominant than the others and who in turn was chosen by four of the other five sub-leaders. The second choice sociogram saw this class break into two distinct groups. One group had two leaders with reciprocating choices, while the other group had four leaders in a loosely interlocked choice structure.

As in the analysis of the sociograms for Question I and III, the sociograms for Question II for the two groups present opposite sequence patterns. The clique in Class A appearing on first choice is observed in the second choice for Class B. Class A had a dominant leader whereas Class B, in contrast, is lead by six leaders each commanding approximately the same degree of support from class members. On second choice for this latter class, the leadership structure tended to deteriorate into two factions rather than to consolidate about a single leader.

The two conditions cited earlier as being essential to the support of the hypothesis are therefore considered to be verified and are presented in its support. Of the two classes, which have been shown to be equal in academic qualifications, the more cohesive, mono-led class presented the superior performance.

The Second Phase

The second phase lacks in scientific rigor yet is thought to have sufficient interest to justify reporting.

Two topics in Educational Psychology, one on group dynamics and the other on psychometrics, are taught at the beginning and the end respectively of the spring semester. In an attempt to see what would happen to the group structure of the two classes, the investigator prepared his lectures for these units about the sociograms from the three questions and dealt intensively with pertinent research findings and their possible implications. Unfortunately, the emphasis placed on these topics precluded re-administration of additional measures at the end of the course to determine if changes in group structure had occurred since January. The investigator can report from his observations that Class A moved on unchanged. However, in Class B there appeared to emerge during this period one dominant leader from the sub-leaders, illustrated by the following incident. The investigator on the last day of classes took them to coffee in lieu of a final lecture. This came as a surprise to them but, without hesitation, the student

suspected of now being the dominant leader rose to thank the instructor for the treat and his efforts on behalf of the class during the year. There occurred other incidents of a similar nature, all suggestive of the emergence of a dominant leader and of much stronger class cohesiveness.

Further evidence of change is noted in class performance. The “final” class marks are presented in Table IV.

TABLE IV
COMPARISON OF CLASS MEANS OF FINAL SCORES ON
TWELVE COURSES AND YEAR’S AVERAGE MARK FOR
CLASSES A AND B

Course	Class A (N = 45)		Class B (N = 46)		Significance of Difference
	Mean	S.D.	Mean	S.D.	
A	64.09	9.18	61.24	5.77	N.S.D.
B	54.58	8.34	58.35	6.23	2% level
C	66.62	7.29	67.85	5.06	N.S.D.
D	68.68	8.85	59.35	9.05	N.S.D.
E	55.57	12.13	62.98	7.55	1% level
F	64.71	13.92	61.87	8.21	N.S.D.
G	67.02	12.38	62.13	7.82	5% level
H	63.53	9.04	62.59	7.72	N.S.D.
I*	66.91	13.16	63.83	10.70	N.S.D.
J	57.36	11.41	63.65	10.27	1% level
L‡	71.22	7.08	71.30	12.03	N.S.D.
M†	62.84	8.85	69.89	11.02	1% level
Year’s Ave.	63.68	6.26	64.25	5.33	N.S.D.

*Final Mark of Course taught only in fall semester.

‡Only final mark is reported.

†Taught only in second semester.

It is noted that Class B made remarkable strides in improving its performance from Christmas to April. It’s average mark shows a gain in performance significant at the 1% level of confidence. Class A, on the other hand, showed no statistically significant gain in average performance from Christmas to April.

Discussion

It would be naive for the investigator to report the above findings as conclusive evidence of the exclusive role of group leadership and group cohesiveness in class performance. Too many of the variables used lacked sufficient control to warrant such a conclusion. Questions as to the validity of the data are as follows:

(1) How consistent were the lecturers in presenting course materials to each class, and what was the attitude of each instructor towards each class? It is evident from the remarks made that the very 'temper' of the class B could easily result in the instructor having a relatively negative attitude to it. Or possibly its poor effort at Christmas might have meant an intensification of instructor effort.

(2) University examinations and ratings are suspect for their lack of demonstrated reliability. Further, while it has been noted that certain of the courses taught to the two classes by different instructors had common Christmas examinations, common examinations by themselves do not ensure consistent marking without consolidated scoring. This was effected in only three of the five courses concerned.

(3) It is implied that Class B's improvement is due to a change in sociometric structure of the group during the second semester. The fact that Class B was the poorest class was not secret. Administrative pressures from the Dean's office directed toward low performing students might have stimulated a greater number of Class B students to intensify their academic efforts than of Class A. Class A, which also knew its record, may well have been satisfied to rest on its laurels. Or perhaps, in Cattell's phrase, it had reached the optimum in syntality.

(4) No attempt was made in this study to examine the quality of leadership of the two classes.

(5) There is a question of the equivalence of the two groups in spite of initial academic (mean) equivalence. The variability of performance of Class A, especially on the finals, was much greater than of Class B.

Conclusions

This paper reports some investigations of the effects of group structure on academic performance. The evidence, while subject to many uncontrolled factors, does lend credence to the hypothesis that the sociometric structure of the class does influence group performance. Further, these findings do not differ from those that would be anticipated from findings of similar studies in areas other than the classroom and reported in the literature. For the teacher, this preliminary study implies that the class social structure is important in determining its ultimate performance and should be a consideration when an evaluation of a classes' learning gains are made. But whether the teacher can easily and effectively manipulate the class social structure to facilitate group compatibility and their acceptance of leaders most likely to produce maximum syntality remains to be demonstrated. It may well be that this is a

situation about which the teacher can do little with positive results and consequently must accept as an inherent characteristic of the class concerned. The findings are of equal importance to the administrator. For example, when greater understanding of the role of the class leaders and indeed of the class members is achieved, it could further justify the force-out policy used in some Alberta high schools. Already there is evidence that the presence in the group of an indifferent student (Rosenthal and Cofer) serves to reduce group syntality. When such persons are in leadership roles, undoubtedly the effect is magnified to the further detriment of the class. It must be emphasised that much more research in the classroom situation needs to be done before role in the class social structure can be a major consideration accompanying low academic performance in the effective implementation of force-out policies. For the researcher working with equated group experimental designs, it is becoming increasingly evident that such groups can not be considered as truly equal unless equivalence of group structure can be established beforehand. It may well be, for example, that herein lies the reason for the failure of studies considering the academic performance of teacher-centered versus group centered instruction to produce consistent evidence favoring one method or the other.

It is concluded that the evidence and its important and far-reaching implications overwhelmingly endorses the need for more extensive and exact studies in this area.

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CORRELATES OF ACADEMIC UNDERACHIEVEMENT IN MALE ADOLESCENTS

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Our present day society is characterized by educational opportunity. Education is free, and attempts are made to provide a suitable education for all children who are able to profit by it. At no time in the world's history has so much been spent so willingly on education, and at no time has there been such a need for educated citizens. The development and maintenance of a highly industrialized society has required that even the unskilled worker possess knowledge and skills which would have been superfluous just a generation ago. However, in spite of the many opportunities for education which exist today and notwithstanding the great need for educated citizens at all levels of work, it is probably correct to say that at no time have so many people, possessing the potential and the opportunity, failed to achieve academic excellence. Academic underachievement is one of the most serious problems which school administrators, teachers and parents must cope with today.

The underachieving student poses problems for himself and for others. It is obvious that the child who attends school and does not make the best possible use of his ability puts his parents and the school administration to a great deal of unnecessary expense. There is also the possibility that the child who underachieves will himself be penalized financially for his poor academic showing. It is usually assumed that the road to financial security is via the professions, and children are frequently urged to plan for professional careers. However, attendance at university is a prerequisite for entrance into the professions, and as such attendance is contingent upon one's obtaining good grades in school, it becomes apparent that underachievers may condemn themselves to non-professional, relatively unremunerative careers because of their inability to satisfy college entrance requirements.

The underachiever creates problems for the teacher also. Such students, being disinterested in the school situation, are potential discipline problems. Again, underachievers may influence their grade mates adversely. If a number of children in a class are disinterested, there is always the possibility that such an attitude will

become contagious. Also, one must consider the effect of the presence of such pupils upon the teacher. It is, of course, impossible to calculate the influence that underachievers have upon the teacher who is trying to do a conscientious job, but it can be appreciated that a lack of consideration for a teacher's efforts might well constitute one of the major drawbacks to teaching as a career.

It is obvious that a loss accrues to society when students underachieve. We live in a world in which, in order to maintain our own way of life, we must be prepared to match the progress of those nations whose ideologies are antagonistic to our own. Under such conditions it is essential that all our young people of ability make the best of their potentialities. The problem of academic underachievement thus assumes great social importance.

One might imagine that a problem of such magnitude would have received a good deal of attention in Canada, but such is not the case. A review of the literature reveals that most of the research on underachievement has been carried out on non-Canadian groups and has been restricted to college populations. The present study endeavored, in some small way, to remedy this oversight.

Related Studies

Although it is impossible here to report upon all those areas which were investigated as having some possible bearing upon academic underachievement, several of the more important fields which were touched upon are mentioned below.

Adjustment of the Total Personality. It is frequently suggested that lack of adjustment on the part of the student, especially in the personal, social, and emotional areas, is correlated with underachievement. On reviewing a number of studies which had been done on the relationship of non-intellectual factors to underachievement, Gough (10) reported that lack of maladjustment was found to be related to higher achievement. Stanger (26) offered findings of a similar nature. He determined that students who were classed as unstable and maladjusted tended to be lower in academic achievement than those students who were not so classed. The findings of Assum and Levy (4) are substantially the same as those of Gough and Stagner. Darley (7) implied that maladjustment influences a student adversely so that he is unable to realize the full potential of his measured intelligence.

Not all research workers in this area however, have been able to convince themselves that maladjustment, as measured, is positively related to poor academic achievement. Griffiths (12) could find no significant differences in the personal adjustment scores of poor and superior students at university level. Owens

and Johnson (23) found that when groups of college underachievers, overachievers, and normal achievers were compared, the underachievers compared very favorably in adjustment with those students in the other two groups. Montalto (19) found that achievers revealed more neurotic tendencies than did poorer students.

A review of the findings in this field causes one to conclude that while a good deal of the work done here seems to support the contention that well-adjusted students do better, academically, than do maladjusted ones, enough evidence of a contradictory nature exists to discourage the making of any clear statement regarding the nature of the relationship between adjustment scores and academic success.

Masculinity-Femininity Scores. Some research has been done in an effort to determine whether there is any relationship between masculinity-femininity scores and academic success. Morgan (20) found no differences on the masculinity-femininity scale of the Strong Vocational Interest Blank when he compared scores made by groups of achieving and non-achieving college male sophomores, whereas Altus (1), utilizing the Minnesota Multiphasic Personality Inventory, noted that scores of male underachievers reveal uncertainty, extraversion, and femininity. Kimball (16) and Armstrong (3) reported that male underachievers tended to have certain feminine characteristics or interests, but these findings are at variance with those of Bolander (6), and Stevens (27). Both these latter research workers found that male underachievers tend to make high masculinity scores.

It is obvious from a consideration of the above studies that there is considerable disagreement regarding the nature of the relationship between scores on masculinity-femininity scales and academic grades.

Level of Aspiration. Level of aspiration has been defined as ". . . the level of future performance in a familiar task which one explicitly undertakes to reach. . ." (Frank, 9, p. 120). Inasmuch as level of aspiration is commonly presumed to be influenced by past successes and failures, it might be imagined that characteristically different levels of aspiration could be noted for those students who have done well in school as compared with those students who have not. Jucknat (15) reported that students who had failure experiences were inclined not to raise their level of aspiration on a subsequent trial, whereas those students whose efforts had met with success very frequently stated that they would do even better on their next attempt. Sears (24) found that discrepancy scores (between levels of success expected and success attained) for successful students were closely grouped in a small positive range,

whereas the failure group revealed generally higher discrepancy scores. She concluded that the discrepancy is large for those students who have experienced continual failure. Basically the same findings have been reported by Anderson and Brandt (2). On the basis of the findings reported here, it may be concluded that one's level of aspiration in a given task is influenced by previous experiences of success or failure, and that poor students tend to set levels of aspiration which are considerably at variance with their present levels of performance.

Relations with Parents. An unsatisfactory home atmosphere was noted by Edelston (8) as being of considerable importance in making for educational failure. He declared that there are two extreme kinds of poor home environment to be noted: first, the home in which the parents are indifferent to the child's progress and second, the home in which the parents, being over-anxious, exert too great pressure for achievement upon the child. Similar findings were reported by Barrett (5), while Stice et al. (28) noted that underachievers tended to see their parents as being indifferent or rejecting to them. Kirk (17) expressed the opinion that underachievement may satisfy an unconscious hostility against a parent who is demanding success. Kimball (16) suggests that male underachievers rebel against the father, but the work of Tibbets (33) implies that such students have greater difficulty in establishing satisfactory relationships with the mother. Research by Kurtz and Swenson (18) revealed that pride, confidence, and interest of the parents in their children was in greater evidence for the overachiever than for the underachiever. The former students showed a greater tendency to respect their parents, to take them into their confidence, and to be more concerned with pleasing them. The underachievers were found to have a limited place in the home. They gave few evidences of mutual respect, exchange of affection, or desire to measure up to parental expectations. Their parents, it was found, frequently gave them little encouragement for an extended education.

From the above findings it may be concluded that underachievers tend to have less satisfactory relations with their parents than do overachievers. The underachieving child may see his parents (or one of them) as being rejective, and there is a suggestion that the underachiever tends to be less "close" to his parents than is the overachiever. Parents of underachievers may reveal an attitude of disinterest or indifference towards the academic progress of their children.

Population, Procedures, and Instruments

The population of the present study consisted of thirty-five male students enrolled in Grade Ten in the Edmonton Public School system. These students were selected for a number of reasons. They had written examinations set by the Department of Education of the Province of Alberta at the termination of the Grade Nine year, June 1958. These examinations were partially "objective" in nature and were marked by a panel of teachers in such a way that teacher bias was kept to a minimum. It was assumed, therefore, that the results of these examinations might be accepted as reliable measures of actual academic achievement. Again, the appropriate form (Level Three) of the *School and College Ability Test* (SCAT) was administered to all Grade Nine students in June, 1958. The results of this test, expressed as percentiles based on an Alberta population, were taken to be an accurate measure of the students' academic ability. Male students were selected in preference to a mixed sex group because it was found, by a perusal of the current results of the Grade Nine departmental examinations, that boys constituted the greater percentage of underachievers. Also militating against the use of a mixed sex group was the fact that a possible sex factor might be introduced which would render a comparison of the findings invalid. A secondary school population was preferred to a younger group because it was felt that the more advanced students would be better able to assess and relate their feelings, preferences, attitudes, and problems.

Because of the need for an intensive investigation, into, and a clear understanding of, the problem, behavior, and needs of the students selected, it was decided to use the case study method. Inasmuch as a considerable amount of time was to be devoted to each student, the size of the group was restricted to thirty-five.

Obviously before it can be stated with certainty that a given student is underachieving, it is necessary that one have a measure of his ability to achieve and a measure of his actual level of achievement. However, the actual means by which the degree of underachievement may be assessed after such measures have been obtained may differ considerably.

After due consideration of the various methods by which the degree of underachievement had been assessed by other investigators in this field, it was decided to utilize a quotient in the present study. When the results of the Grade Nine departmental examinations were made available in August of 1958, an inspection of the grades obtained and the SCAT score earned by each student revealed that 234 male students who had passed into Grade Ten were possible underachievers. In order to reduce this number, a

preliminary index of underachievement was computed for each pupil. First, the stanine scores on the five subjects Language, Literature, Science, Mathematics, and Social Studies were obtained. The stanines for Language and Literature were averaged, the score obtained being taken to represent achievement in English. To this average were added the stanines for the remaining three subjects and the mean for this total was obtained. This mean was further divided by the SCAT percentile score made by the student, and the result was multiplied by one hundred in order to remove decimals. The final figure so obtained was called the preliminary index of underachievement. It was assumed that a student who was operating at ,or near capacity, would have a preliminary index of 100, whereas underachievers would earn scores below this figure.

The indices obtained were then studied and certain ones were retained for further investigation. It was deemed advisable to select for further study only those students with the lowest indices in order to ensure that the thesis group would be composed of the most marked underachievers. Consequently, only those students whose preliminary indices were lower than seventy were further considered. The use of the preliminary index as a screening device made it possible to reduce to fifty-two the original 234 cases selected from the Department of Education records.

The raw scores made in the five school subjects mentioned above were now obtained for the fifty-two students remaining. These scores were utilized because they provided a more exact measure of academic achievement than did the stanine scores used in the first instance. The Language and Literature scores were again averaged, and to this average were added the raw scores for the remaining three subjects. The mean of this total was obtained, and this figure was divided by the SCAT percentile for the given student. The resulting quotient was multiplied by one hundred in order to remove decimals. The final figure so obtained was referred to as the *final index of underachievement*. It was on the basis of these latter indices that the members of the thesis group were selected.

In an effort to gather all data which might be of value in preparing a case history for each student, a variety of instruments were used. Standardized tests included the Brown-Holtzman Survey of Study Habits and Attitudes (SSHA); the Kuder Preference Record (Vocational); the Wechsler-Bellevue Intelligence Scale; the SRA Youth Inventory; the Guilford-Zimmerman Temperament Survey; and the Rotter Incomplete Sentences Blank. Other research instruments utilized were the Bills Index of Adjustment and Values; the Taschuk Self-Concept Inventory, (Taschuk,

32), and a modification of this instrument, the *Taschuk-Hepburn Self-Ideal Concept Inventory*; the *McQuary and Truax Underachievement Scale* (McQuary and Truax, 22); the *Gough Predictive (Achievement) Scale*, (Gough, 11) and four structured interviews which had been prepared by Super and others (Super, et al., 30). These interviews covered the topics, "Free Time"; "School"; "Family"; and "Plans". Also used were checklists, blanks, and inventories prepared by the author which gathered information on the student's level of academic aspiration; his self-concept; his reading habits; his position in the family; his vocational preferences; and his opinion regarding those factors which are of most importance in determining one's success in life. Cumulative record cards and other school records were also consulted. The information offered by the use of these instruments was utilized in the preparation of a comprehensive case history for each student. When all such case histories had been prepared they were studied closely with a view to identifying correlates of academic underachievement.

Factors Related to the Home

As Haggard (13) has suggested, when the child does not accept the academic situation completely or does not appear to be deriving the maximum value from his educational opportunities, there is a tendency to look to the home for an explanation. Such a step is seen to be a logical one, for the parents are those agents of society who are most responsible for the transmission of culturally accepted educational values to the child. It is further held that if relations between the child and his parents are not completely satisfactory, especially as seen from the viewpoint of the former, then such distortion of parent-child relationships may well be reflected in the child's educational achievement.

An examination of the case histories prepared for the members of the thesis group revealed evidence of parental rejection in approximately 66 per cent of the cases, or in twenty-three cases of the thirty-five. In six instances it was not possible to identify either parent as being more rejective than the other; in eight cases the mother appeared to be rejecting; while in nine instances the father emerged as the rejecting parent. In a small number of cases the rejection was revealed in the active dislike or open hostility of the parent for the child, but in the majority of instances it was manifested through attitudes of disinterest and indifference. Symonds (31, p. 23) examines the importance of apparently inconsequential acts from the point of view of parental acceptance or rejection and notes:

It may be nothing more than a shrug of the shoulder, the lifting of an eyebrow, or a gleam in the eyes; it may be a chance remark expressing fondness or hatred; it may be the mere fact that parent and child do things together, or that the child is not included in the parents' plans and activities. These subtle and elusive tokens of rejection or acceptance are just as significant from the point of view of parent-child relationship as other more overt forms of expression.

Rejection of the child by a parent may occur for a number of reasons. Frequently children are rejected because their birth was not welcomed. Male children may be rejected if the parents wanted a girl, and vice versa. Children of either sex may be met by rejective behavior on the part of the parents if they are sickly or physically disabled. There is also the possibility that the child may experience feelings of rejection even when none is intended. The arrival of a new sibling, for example, may cause an older brother or sister to feel unloved because they no longer receive the attention they once did. Also, the continued absence of a preferred parent may cause a child to feel rejected.

It is interesting to note that the subjects reacted to their rejection in a number of ways. Some became engrossed in numerous outside interests and tried to stay away from home as much as possible. Others apparently refused to accept rejection and continued to desire more time in the company of the rejecting parent. A number of students tried to give the impression that they were quite happy with the "laissez-faire" attitude of their parents and appreciated being left almost exclusively "on their own". In a small number of cases there is a record of criminal activities, in most instances petty, which may represent a reaction against rejection or a desire to spite an unloving parent.

It is held that such poor parent-child relations might well have influenced academic achievement in a number of ways. The child might purposely do poorly in school in order to spite a rejecting parent. Again, the child, experiencing rejection at home, might believe that no one is particularly interested in his school progress and so lack the motivation to do well. Finally, the child, feeling himself rejected by his parents, might try to gain attention from his parents and others by becoming a problem in school by adopting patterns of behavior which are unacceptable or by making poor grades. It should not be assumed that the underachiever's reaction to parental rejection is necessarily a conscious one. The child may be quite unaware that his poor school progress is directly related to his unsatisfactory relationships at home. Many pupils in the present study quite readily admitted that they were under achievers, but almost invariably blamed their poor school progress on lack of study, poor study habits, poor attitudes towards school. While it would appear that attitudes of parental rejection will almost

certainly influence the student's academic achievement adversely, it is impossible to say whether his reaction to such rejection will operate on a conscious or an unconscious level.

When a number of hypotheses were tested, certain other correlates of underachievement, related to the home but in most cases quite distinct from parental rejection, were also noted. In 49 per cent of the cases investigated here it was found that the subject was the oldest child in his family. There is a possibility that this finding may tie in with the pattern of parental rejection discussed above. It seems logical to assume that the oldest child in a family would be most apt to feel rejected as he saw himself being replaced in his parents' affections by younger siblings. An investigation into the number of languages spoken in the home revealed that in more than 90 per cent of the cases only English was used. The belief that underachievers frequently are products of homes in which at least one foreign language is spoken received little support from the results of this study. It was also found that the vast majority of the parents of the children studied were Canadian-born or were born in English-speaking countries. In only one instance was it possible to determine that a parent had been born in a country in which English was not the accepted language. It has sometimes been assumed that underachievers are products of broken homes, but once again there was little evidence in this study to support this contention. Only two students came from homes in which one parent was missing, in one instance through divorce, and in the other through death.

The occupational status of the fathers of the present group of students was investigated in order to determine something of the socio-economic level of the homes from which these children came. When the percentage of fathers of underachievers who fell into the various occupational categories were compared with the percentages of all employed males in Edmonton as of the 1951 census, several interesting findings were noted. Twice as many underachievers have fathers in the "managerial" classification as are found in the general population. "Clerical" occupations also contribute heavily to the underachieving group; "Service" and "construction" categories are very lightly represented for underachievers. There is no clear evidence to suggest that underachievers come from homes of low socio-economic status; indeed, the evidence may support the opposite contention.

Factors Related to the School

Relatively few underachievers in the present study revealed an openly hostile attitude towards school, but there is a strong suggestion that a large number of these students are quite disinterest-

ed in, or indifferent towards, the school situation. In at least 75 per cent of the cases there is evidence that the subjects are not particularly interested in attending school.

One might ask, "Why do so many of these students show a dislike for, or a disinterest in, school?" A close examination of replies given on the SSHA and the SRA *Youth Inventory* suggest a number of reasons. Forty per cent of the group indicated that their dislike for at least one teacher was such that it caused them to neglect their schoolwork, and 91 per cent declared that they would not approach a teacher to ask for help if they were having difficulty with their school course. Thus it would appear that a number of these students do not enjoy particularly close or pleasant relations with their teachers. The content of the courses offered was also attacked by a number of this group. Forty per cent revealed that they found it difficult to concentrate upon certain of their courses because they were dull and uninteresting, and about one-half of these students believed that they were required to take courses which were of no practical value.

These underachievers also revealed certain weaknesses in applying themselves efficiently in school. Approximately two-thirds stated that, when taking notes in class, they tried to take down every word spoken by the teacher, because they found it difficult to determine what was important and what was not. About one-half of the group revealed that they had little idea as to how one should prepare for an examination and a like number admitted that they had considerable difficulty in expressing themselves in writing. Sixty per cent of the students noted that they found it very difficult to concentrate upon the work in class, and two-thirds admitted that they made no special effort to be neat in the work which they had to pass in to the teacher for correction. Twenty of the thirty-five students revealed that they did not study their hardest unless they really liked a course. If a subject was not liked, there was a tendency to do just enough work to guarantee a pass. One-half of the group declared that studying was a "hit-or-miss" proposition, depending upon the mood they were in, while slightly more than this number stated that having a good time is just as important in a boy's life as is studying. Although the possibilities were investigated, there was little to suggest that a desire to conform to the academic standards approved by age mates, or the possession of a presumably poor educational background were factors which influenced one's academic achievement adversely.

When the stanine scores made by these underachievers in the subjects Mathematics, Literature, and Language on the Grade Nine departmental examinations were studied, it was noted that

these students tended to make lower scores in these courses than did the generality of Grade Nine students on whose achievement the stanines were based. (See Table I). Underachievers appear to be

TABLE I
DISTRIBUTION OF STANINE SCORES IN MATHEMATICS,
LITERATURE, AND LANGUAGE FOR UNDERACHIEVERS

Subject	Stanines 9, 8, 7, 6	Stanine 5	Stanines 4, 3, 2, 1
Mathematics	2	14	19
Literature	8	8	19
Language	7	10	18

especially poor in Mathematics, as compared with total Grade Nine group, and are also, but to a lesser extent, deficient in Literature and Language. No such uneven distribution of stanine scores was noted for Social Studies and Science. It is interesting to note that, on a standardized reading test given at the end of the Grade Nine year, 63 per cent of the underachievers studied made scores which exceeded the midpoint of the distribution of scores made by all Grade Nine students.

One might imagine that students underachieve because they do not appreciate the value of a formal education. However, when these underachievers were asked to rank order twelve factors which might be seen as being of importance in determining one's success in life, 83 per cent of the group placed "education" in the position of greatest importance. Also, there was nothing to suggest that these underachievers lacked confidence in their ability to do better scholastically. Ninety-four per cent of this group admitted that their Grade Nine marks were lower than they should have been and indicated that these grades did not present a true picture of their ability. It is apparent, then, that these students felt confident that they could do better work in school. The members of this group attended school as regularly as did the generality of students in their grade, and, when compared with the students in McManus' study (21), underachievers were found not to have a more frequent rate of academic failure than have the members of a group of unselected Grade Nine students.

By means of a blank devised by the author, it was possible to gather information regarding the level of academic aspiration of each member of this group of underachievers. This instrument offered a "difference score" for each pupil, i.e., the discrepancy between the average of the grades which the pupil predicted he

would make on certain examinations and the average of the grades which, eventually, he *did* make. A coefficient of correlation was computed for these difference scores and for the students' final indices of underachievement. The coefficient was found to be significantly above zero at the .01 level of confidence. This result suggests that those students who were most unrealistic or irrational in their level of academic aspiration were most marked in their underachievement.

Personality Factors

In an effort to learn something of the personality traits which are characteristic of academic underachievers, a number of instruments were utilized. Of greatest value was the *Guilford-Zimmerman Temperament Survey* (hereafter referred to as the G/Z). It was determined that most of the present group of underachievers were not completely accepting of themselves; and a somewhat smaller number, approximately one in every three, were very acutely aware of their shortcomings and saw themselves in a correspondingly less favorable light.

The majority of the members of this group were interested in action rather than reflection. They tended to be labile in their emotions and interests, quickly going from interest in, and excitement over, a project or a course of action to the opposite. They lacked the energy or drive needed to keep up a sustained or persistent effort. Further, most of these students did not enjoy satisfactory relations with others. They tended to be relatively shy and submissive, shrinking from social contact and from positions of responsibility. Although the majority of these underachievers accepted the domination of their peers, they resented it; they were suspicious and harbored feelings of hostility and belligerence. They were sensitive to the opinions of others and were frequently secretly hurt by the actions of adults and peers because they tended to keep their real feelings to themselves. Their tendency to rate themselves as being relatively "masculine" might represent an attempt to compensate for other recognized weaknesses. High scores on the G/Z "masculinity" scale may also suggest a lack of sympathy for others. The majority of these underachievers reported unsatisfactory social relations with members of the opposite sex.

Stevens (27) substantiates certain of the above conclusions. He found that underachievers tend to be more self-rejective than overachievers. He believes that these essentially negative, perhaps hostile, self-attitudes have lowered the self-esteem of the students to a point where academic efficiency is impaired. Whereas previous studies (Gough, 11-, Kimball, 16) have suggested external rejection of authority as the cause of underachievement, Stevens believes

that his findings imply that such attitudes of rejection have been internalized.

The study by Sheerer (25, p. 174) is also of interest at this point. She noted that ". . . there is a definite and substantial correlation between attitudes of acceptance of, and respect for, self and attitudes of acceptance of, and respect for, others . . ." If such is the case, and Sheerer's findings have been supported by other research workers, then it is not surprising to find that the tendency which underachievers have to reject themselves is closely allied with a tendency to reject others also.

The views of Harry Stack Sullivan (29, p. 10) offer further support for the interpretation given above. He noted,

The self may be said to be made up of reflected appraisals . . . if the self dynamism is made up of experience which is chiefly derogatory, then the self dynamism will itself be chiefly derogatory. It will facilitate hostile and disparaging appraisals of self . . . The peculiarity exists that one can find in others only that which is in the self. And so the unhappy child who grows up without love will have a self-dynamism which shows great capacity for finding fault with others and, by the same token, with himself.

Such a view of interpersonal relations gains considerable support from the findings of the present study. It was noted that the majority of these underachievers experienced parental rejection, that most of them had basically self-rejective attitudes, and that the majority of them tend to reject others. Sullivan would insist that this pattern of findings was not due to coincidence. He would suggest that since one's self is "made up of reflected appraisals", one tends to regard himself as unworthy if others do so. Because one is rejected by others, he tends to become self-rejective, and, because "one can find in others only that which is in the self," feelings of rejection toward others are inevitable.

Finally, a study by Hanlon et al. (14) may be noted. These workers utilized a group of students remarkably similar to that used in the present study and noted that "self-ideal congruence", i.e., the relationship between self-concept and self-ideal concept, tends to correlate very highly with a number of factors which have been touched upon here. It was found, for example, that measures of self-adjustment, self-reliance, sense of personal worth, feeling of belonging, freedom from withdrawal tendencies, social adjustment, social skills and community relations all correlated very highly with measures of self-ideal congruence. The latter measure and estimates of "family relations" were significantly correlated also.

The marked similarity between the conclusions of Hanlon and his co-workers and those drawn in this study are at once apparent. They conclude (p. 217):

Subjects in the low self-ideal congruence group were characterized by a lack of persistence in work habits and by feelings of oppression and inadequacy. They were more likely to feel rejected by both family and peers and tended to react to this rejection by withdrawing within themselves . . . and . . . subjects in the low self-ideal congruence group showed uneasiness in social situations. They tended to stay in the background and to avoid contacts calling for poise and diplomacy, for they were easily hurt and were aware of their proneness to quarrel. They tended to dislike school, and their negativistic attitudes made for difficulties in their relationships with teachers, fellow students, and members of the opposite sex.

Conclusions

There is evidence that a majority of the underachievers studied here believed themselves to be rejected by one or more of their parents. It is held that such rejection has unconsciously caused the underachieving student to see himself in a poor light. He tends to become self-rejecting and unaccepting of self. This tendency to be critical was also found in the underachiever's interpersonal relations, possibly because he can accept others only to the same extent that he can accept himself. A general inability to get along with peers of both sexes was noted for many of these students. Such students, seeing themselves as not being socially adept, tended to accept the domination and leadership of others, although they resented being cast in the role of "followers." These underachievers frequently reported that they had a "bad temper." Such outbursts of temper may not be unusual in people who unwillingly accept domination by others. It is possible that the individual, finding it degrading to accept completely the role of "follower", feels that he must assert himself on occasion. Such assertions, being the result of long pent-up feelings of inadequacy and domination, are seen as outbursts of "bad temper" and represent to the onlooker and to the individual himself over-reactions to the situation at hand.

The underachiever may reveal an inability to put forth a persistent and sustained effort for any length of time. He may be unrestrained and act quickly without giving proper consideration to the consequences of his acts. It has been suggested that such lack of restraint is evidence of a desire for immediate gratification and a disinclination or an inability to seek out long-range goals.

A relatively large number of this present population of underachievers disliked the school situation, possibly because it represented another area in which they might reveal their weaknesses. It was not surprising to find that most underachievers frankly admitted that they were not operating at their fullest capacity. The desire to preserve his self-esteem might cause the underachiever to say, in effect, "I could do much better in school, but I'm not interested and I don't put enough time on my studies." While these underachievers readily admitted that they fell into this category, there

is a suggestion that some of them never quite accepted this status completely. It is understandable, therefore, that a number of these students had relatively unrealistic levels of academic aspiration. They refused to accept the fact of their underachievement and continued to aim for higher grades than they would probably attain. Other underachievers might, however, be so crushed by continual defeat that they would set levels of aspiration which were unrealistically low. This might also serve as a device for the preservation of one's self-esteem, for if one is striving for an easily-attainable goal he is almost certain to meet with success. Mathematics, which requires close attention to detail and persistent effort, was the subject which underachievers found most difficult. The stereotype which is frequently held of the underachieving student—that of the extraverted, outgoing, socially competent student who spends a good deal of time on extra-curricular activities—was not borne out by the findings of this study. Most of the members of the present population were relatively disinterested in any type of extra-curricular activity, quite possibly because they believed that they possessed inadequacies in the area of interpersonal relations which would work to their disadvantage.

The indecision and lack of foresight which had been noted for these underachievers in other areas was also to be seen with reference to their vocational goals. Many such students apparently selected occupations which sounded exciting, once again revealing a tendency not to think in terms of long-range outcomes. In most cases it was obvious that little was actually known about the occupations chosen, for the measured interests of the majority of these underachievers did not support the vocational goals selected.

There was some proof that students who are identified as underachievers tended to remain so. Barrett (5) reported such a finding, and the results of the pilot study and of the present research supported such a view. This finding suggested that habits of underachievement, once learned, are difficult to break. It is quite possible, however, that those factors which make for underachievement in the child at Grade Five might still operate when the child is in Grade Ten. If such reinforcement continues to be present, it is quite likely that patterns of underachieving behavior will be difficult to unlearn. It is not certain that the underachiever can easily divest himself of the habits of underachievement, but it would seem that early identification of underachievement, followed by a concentrated attack by both teachers and parents upon the conditions responsible, would offer the best approach to the amelioration of this problem.

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testable hypotheses and theoretical orientations will no doubt prove useful for some time to come, as will the well-organized, current and judiciously selected bibliography.

At the same time, the bulletin has some important limitations and an historical significance worthy of note. It is one of a current series produced by the American Sociological Society in collaboration with the Russell Sage Foundation to: (1) acquaint sociologists with research opportunities in vital fields of social practice, and (2) show practitioners in these fields the contributions they may expect from present-day sociology.* In order to meet the series' specifications Brim has had to be excessively brief and selective. While his efforts to cover the ground succinctly and accurately deserve but praise, he has demonstrated only one of a number of theoretical approaches available for the sociological study of education. Further, he has given passing or no mention to sociology's contributions and opportunities in graduate education programs, adult education, the curriculum, in understanding and effecting change in education and in society, and in studying informal educational agencies and processes.

Historical perspective is needed to appreciate fully the series of which the bulletin is a part as well as the bulletin itself. The series is a current expression of a century-old and still virile movement to improve American society through the science of sociology. The bulletin is also a current expression of a fifty-year old subsidiary movement to improve American education and ultimately society by the same means. Considered as the ideology of these partially institutionalized movements, Brim's aims, hopes and salesmanship are understandable, especially to the person who sees that public education today is also an incompleting movement in many important characteristics.

B. Y. CARD,
May, 1959.

*Already published are *Sociology and the Field of Corrections* by Lloyd E. Ohlin, *Sociology and the Field of Mental Health* by John A. Claussen, and *Sociology and the Military Establishment* by Morris Janowitz. In preparation are *Sociology and the Field of Medical Practice* and *Sociology and the Field of Social Work*.

